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Yours truly
A. A. Kent, M.D.

TRANSACTIONS

OF THE

MEDICAL SOCIETY

OF THE

STATE OF NORTH CAROLINA

FIFTY-NINTH ANNUAL MEETING

HELD AT

HENDERSONVILLE, N. C.

JUNE 18, 19, AND 20, 1912

PRESIDENT, DR. A. A. KENT, LENOIR

SECRETARY, DR. DAVID A. STANTON, HIGH POINT

EDITED FOR THE ASSOCIATION BY D. A. STANTON, M.D.

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"It is understood that the Society is not to be considered as endorsing all the views and opinions of authors of papers published in the Transactions of the Society."—*Extract from By-Laws, Chap.* 10, *Sec.* 8.

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ROSTER OF OFFICERS OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA FROM ORGANIZATION TO 1912.
*Missing Data not to be Found in Records.

	Date	Place	Members in Attendance	Presidents	Vice-Presidents.	Secretary	Treasurer	Members on Roll.*	Honorary Members.*	Honorary Fellows.*
	1849	Raleigh	25	F. J. Hill	.....	W. H. McKee	.....	25	....	....
1	1850	Raleigh	21	Edmund Strudwick	F. J. Haywood, C. E. Johnson, J. W. Williamson, W. G. Thomas.	W. H. McKee	W. G. Hill	38	9	....
2	1851	Raleigh	23	Edmund Strudwick	C. E. Johnson.	W. H. McKee	W. G. Hill	46	9	....
3	1852	Wilmington	38	J. E. Williamson	Thomas N. Cameron, William G. Hill, Johnston B. Jones, N. J. Pittman.	E. B. Haywood	J. J. W. Tucker	72	12	....
4	1853	Fayetteville	24	J. E. Williamson	Wm. G. Hill, Johnston B. Jones, J. B. G. Myers, N. J. Pittman.	W. W. Harris	Daniel Duprce	80	14	....
5	1854	Raleigh	37	J. H. Dickson	N. J. Pittman, J. B. G. Myers, J. Graham Tull, A. D. McLean.	S. S. Satchwell	Daniel Dupree	84	17	....
6	1855	Salisbury	23	J. H. Dickson	J. Graham Tull, Owen Hadley, A. D. McLean, Hugh Kelly.	S. S. Satchwell	J. B. Dunn	96	18	....
7	1856	Raleigh	35	C. E. Johnson	Marcellus Whitehead, E. R. Gibson, Johnston B. Jones, O. F. Manson.	S. S. Satchwell	J. B. Dunn	101	22	....
8	1857	Edenton	25	C. E. Johnson	Marcellus Whitehead, O. F. Manson, H. W. Faison, E. T. Gibson.	W. G. Thomas	J. B. Dunn	113	16	....
9	1858	Newbern	69	W. H. McKee	Edward Warren, C. W. Graham, Caleb Winslow, A. B. Pierce.	W. G. Thomas	J. B. Dunn	172	18	....
10	1859	Statesville	81	W. H. McKee	James G. Ramsey, P. E. Hines, J. R. Mercer, W. T. Howard.	W. G. Thomas	C. W. Graham	....	....	....
11	1860	Washington	64	N. J. Pittman	P. T. Henry, R. H. Winborne, M. Whitehead, T. S. Leach.	W. G. Thomas	C. W. Graham	233	18	....
12	1861	Morganton	23	N. J. Pittman	J. J. Summerell, C. T. Murphy, G. W. Hodges, W. A. B. Norcom.	W. G. Thomas	C. W. Graham	244	18	....
13	1866	Raleigh	20	J. J. Summerell	.....	W. G. Thomas	C. W. Graham	....	....	....
14	1867	Tarboro	41	W. G. Thomas	E. Burke Haywood, R. H. Winborne, W. L. Barrow, J. W. Jones.	S. S. Satchwell	C. W. Graham	288	11	....
15	1868	Warrenton	27	S. S. Satchwell	Hugh Kelly, George E. Foote, Charles J. O'Hagan, J. H. Baker.	Thomas F. Wood	J. W. Jones	....	....	....
16	1869	Salisbury	36	E. Burke Haywood	Thos. E. Wilson, A. B. Pierce, C. T. Murphy, M. A. Locke.	Thomas F. Wood	J. W. Jones	....	....	....
17	1870	Wilmington	38	C. J. O'Hagan	E. A. Anderson, F. N. Lucky, W. R. Sharpe, R. L. Payne.	Thomas F. Wood	J. W. Jones	....	....	....
18	1871	Raleigh	35	Hugh Kelly	D. N. Patterson, R. C. Pearson, J. B. Seaby, G. L. Kirby.	Thomas F. Wood	J. W. Jones	....	....	....

ROSTER OF OFFICERS OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA—Continued.
*Missing Data not to be Found in Records.

	Date	Place	Members in Attendance	Presidents	Vice-Presidents.	Secretary	Treasurer	Members on Roll.*	Honorary Members.*	Honorary Fellows.*
19	1872	Newbern	34	W. G. Hill	H. W. Faison, R. I. Hicks, G. H. Macon, W. A. B. Norcum.	James McKee	J. W. Jones	....	....	....
20	1873	Statesville	43	M. Whitehead	W. T. Ennett, William Little, Chas. Duffy, T. P. Jerman.	James McKee	H. T. Bahnson	....	....	....
21	1874	Charlotte	56	W. A. B. Norcum	J. B. Jones, R. F. Lewis, C. G. Cox, J. L. Knight.	James McKee	H. T. Bahnson	....	....	....
22	1875	Wilson	60	J. W. Jones	Walter Debnam, J. A. Gibson, Wm. Little, D. N. Patterson.	James McKee	H. T. Bahnson	148	5	....
23	1876	Fayetteville	33	Peter E. Hines	Jos. H. Baker, G. G. Smith, T. D. Haigh, J. K. Hall.	James McKee	H. T. Bahnson	157	4	....
24	1877	Salem	42	George A. Foote	J. K. Hall, B. W. Robinson, A. Holmes, A. A. Hill.	James McKee	A. G. Carr	177	4	....
25	1878	Goldsboro	79	R. L. Payne	E. M. Rountree, Richard Anderson, S. B. Flowers, L. A. Stith.	L. J. Picot	A. G. Carr	194	6	....
26	1879	Greensboro	109	Charles Duffy, Jr.	J. A. Gibson, Willis Alston, Jas. McKee, A. A. Hill.	L. J. Picot	A. G. Carr	198	6	....
27	1880	Wilmington	105	J. F. Shaffner	J. K. Hall, W. C. McDuffie, W. R. Wilson, R. F. Lewis.	L. J. Picot	A. G. Carr	225	6	....
28	1881	Asheville	92	R. B. Haywood	J. E. McRee, W. H. Lilly, R. H. Speight, W. J. H. Bellamy.	L. J. Picot	A. G. Carr	254	6	....
29	1882	Concord	65	Thomas F. Wood	T. J. Moore, D. J. Cain, S. E. Evans, John McDonald.	L. J. Picot	A. G. Carr	297	7	....
30	1883	Tarboro	112	J. K. Hall	A. W. Knox, J. M. Hadley, E. S. Foster, John Whitehead.	L. J. Picot	A. G. Carr	310	7	....
31	1884	Raleigh	112	A. B. Pierce	F. W. Potter, G W. Graham, R. Dillard, G. W. Long.	L. J. Picot	A. G. Carr	348	7	....
32	1885	Durham	173	W. C. McDuffie	James McKee, T. E. Anderson, W. H. Whitehead, A. G. Carr.	W. C. Murphy	R. L. Payne, Jr.	424	6	....
33	886	Newbern	113	Joseph Graham	H. T. Bahnson, L. J. Picot, J. L. McMillan, W. W. Faison.	J. M. Baker	R. L. Payne, Jr.	438	7	....
34	1887	Charlotte	112	H. T. Bahnson	G. G. Smith, J. L. Nicholson, C. M. Poole, H. B. Ferguson.	J. M. Baker	R. L. Payne, Jr.	452	7	....
35	1888	Fayetteville	133	T. D. Haigh	W. P. Ennett, J. A. Dunn, T. E. Anderson	J. M. Baker	C. M. Poole	306	6	....

ROSTER OF OFFICERS OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA—Continued.
*Missing Data not to be Found in Records.

	Date	Place	Members in Attendance	Presidents	Vice-Presidents	Secretary	Treasurer	Members on Roll*	Honorary Members*	Honorary Fellows*
36	1889	Elizabeth City	50	W. T. Ennett	W. J. Jones, S. W. Stevenson, G. W. Long	J. M. Baker	C. M. Poole	410	6	....
37	1890	Oxford	160	G. G. Thomas	R. L. Payne, Jr., Richard Dillard, S. W. Booth.	J. M. Hays	C. M. Poole	414	6	....
38	1891	Asheville	135	R. H. Lewis	S. W. Battle, J. L. Nicholson, W. H. Lily	J. M. Hays	C. M. Poole	422	6	....
39	1892	Wilmington	162	W. T. Cheatman	T. S. Burbank, J. W. Long, W. H. H. Cobb, W. D. Hilliard.	J. M. Hays	C. M. Poole	431	6	....
40	1893	Raleigh	221	J. W. McNeill	W. G. Galloway, H. H. Harris, J. M. Hadley, Thomas Hill.	R. D. Jewett	M. P. Perry	447	5	3
41	1894	Greensboro	166	W. H. H. Cobb	J. A. Hodge, R. W. Tate, Willis Alston, M. H. Fletcher.	R. D. Jewett	M. P. Perry	454	5	3
42	1895	Goldsboro	...	J. H. Tucker	J. Howell Way, W. H. Harrell, O. McMullan, C. A. Misenheimer.	R. D. Jewett	M. P. Perry	436	7	3
43	1896	Winston-Salem	158	R. L. Payne	S. D. Booth, J. P. Monroe, J. A. Boroughs, J. E. Grimsley.	R. D. Jewett	M. P. Perry	452	7	3
44	1897	Morehead City	103	P. L. Murphy	J. C. Walton, A. A. Kent, M. R. Adams, B. L. Long.	R. D. Jewett	M. P. Perry	406	6	3
45	1898	Charlotte	...	Francis Duffy	E. C. Register, A. T. Cotton, J. B. H. Knight, F. H. Russell.	R. D. Jewett	M. P. Perry	437	6	9
46	1899	Asheville	152	L. J. Picot	I. W. Faison, J. W. White, H. H. Dodson, W. C. Brownson.	George W Pressly	G. T. Sikes	489	6	16
47	1900	Tarboro	115	George W. Long	C. M. Poole, Jas. M. Parrott, T. B Williams, W. D. Hilliard.	George W Pressly	G. T. Sikes	482	6	21
48	1901	Durham	186	Julian M. Baker	M. H. Fletcher, C. A. Julian, D. A. Stanton, E. M. Summerell.	George W Pressly	G. T. Sikes	515	5	18
49	1902	Wilmington	147	Robert S. Young	A. G. Carr, E. D. Dixon-Carroll, I. M. Taylor, J. M. Parrott.	George W Pressly	G. T. Sikes	546	5	20
50	1903	Hot Springs	155	A. W. Knox	E. G. Moore, C. A. Julian, W. W. McKenzie, J. L. Nicholson.	J. Howell Way	G. T. Sikes	530	6	19
51	1904	Raleigh	326	H. B. Weaver	John Hay Williams, John C. Rodman, S. F. Pfohl.	J. Howell Way	G. T. Sikes	1033	8	17
52	1905	Greensboro	361	David T. Tayloe	C. A. Julian, John T. Burrus, I. W. Faison	J. Howell Way	G. T. Sikes	1175	8	17
53	1906	Charlotte	406	Edward C. Register	L. B. McBrayer, W. H. H. Cobb, Jr., W. O. Spencer.	J. Howell Way	G. T. Sikes	1234	8	16
54	1907	Morehead City	217	Samuel D. Booth	C. M. Strong, J. E. McLoughlin, W. F. Hargrave.	David A. Stanton	H. McKee Tucker	888	7	16
55	1908	Winston-Salem	372	J. Howell Way	J. E. Stokes, J. A. Turner, W. H. Dixon,	David A. Stanton	H. McKee Tucker	998	7	28
56	1909	Asheville	337	J. F. Highsmith	C. M. Poole, D. A. Garrison, D. O. Dees	David A. Stanton	H. McKee Tucker	1067	7	25
57	1910	Wrightsville Beach	276	E. J. Wood	John O. Myers, L. B. Wharton	David A. Stanton	H. D. Walker	1080	8	35
58	1911	Charlotte	412	C. M. Van Poole	J. V. McGougan, W. E. Warren, L. N. Glenn.	David A. Stanton	H. D. Walker	880	8	45
59	1912	Hendersonville	296	A. A. Kent	J. P. Monroe, W. P. Horton, J. G. Murphy	David A. Stanton	H. D. Walker	950	....	....

PAST MEMBERS BOARD OF MEDICAL EXAMINERS OF THE STATE OF NORTH CAROLINA.

JAMES H. DICKSON, President, Wilmington.....1859-1866
Charles E. Johnson, Raleigh.....1859-1866
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Otis F. Manson Townsville.....1859-1866
William H. McKee, Raleigh.....1859-1866
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J. Graham Tull, Newbern.....1859-1866
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M. H. FLETCHER, President, Asheville.....1902-1908
James M. Parrott, Kinston.....1902-1908
J. T. J. Battle, Greensboro.....1902-1908
Frank H. Russell, Wilmington.....1902-1908

NEXT ANNUAL SESSION AT MOREHEAD CITY, JUNE 10, 11, and 12, 1913

John C. Rodman, President, Washington, Chemistry and Pediatrics.
Benj. K. Hays, Secretary, Oxford, Materia Medica.
Lewis B. McBrayer, President, Asheville, Surgery.
Wm. W. McKenzie, Salisbury, Anatomy and Histology.
Henry H. Dobson, Greensboro, Practice of Medicine.
John Bynum, Winston-Salem, Obstetrics and Gynecology.
J. L. Nicholson, Richlands, Physiology and Hygiene.

NEXT ANNUAL SESSION AT MOREHEAD CITY, JUNE 10, 11, and 12, 1913

ROSTER OF MEMBERS NORTH CAROLINA STATE BOARD OF HEALTH, FROM ORGANIZATION IN 1877 to 1912.

Name	Address	Appointed by	Terri
S. S. Satchwell, M.D., President..	Rocky Point...	State Society	1877 to 1878
Thomas F. Wood, M.D., Secretary	Wilmington....	State Society	1877 to 1878
Joseph Graham, M.D.....	Charlotte.....	State Society	1877 to 1878
Charles Duffy, Jr., M.D.....	Newbern.....	State Society	1877 to 1878
Peter E. Hines, M.D.....	Raleigh.....	State Society	1877 to 1878
George A. Foote, M.D.....	Warrenton.....	State Society	1877 to 1878
S. S. Satchwell, M.D., President...	Rocky Point...	State Society	1878 to 1884
Thomas F. Wood, M.D., Secretary	Wilmington....	State Society	1878 to 1884
Chas. J. O'Hagan, M.D., President	Greenville.....	State Society	1878 to 1882
George A. Foote, M.D.....	Warrenton.....	State Society	1878 to 1882
Marcellus Whitehead, M.D.....	Salisbury.....	State Society	1878 to 1880
R. L. Payne, M.D.....	Lexington.....	State Society	1878 to 1880
H. G. Woodfin, M.D.....	Franklin.....	Gov. Z. B. Vance.	1878 to 1880
A. R. Ledeux, Chemist.....	Chapel Hill....	Gov. Z. B. Vance.	1878 to 1880
William Cain, Civil Engineer.....	Charlotte.....	Gov. Z. B. Vance.	1878 to 1880
R. L. Payne, M.D.....	Lexington.....	State Society	1881 to 1887
Marcellus Whitehead, M.D., Pres..	Salisbury.....	State Society	1881 to 1884
J. M. Lyle, M.D.....	Franklin.....	Gov. T. J. Jarvis.	1881 to 1883
William Cain, Civil Engineer.....	Charlotte.....	Gov. T. J. Jarvis.	1881 to 1883
W. G. Simmons, Chemist.....	Wake Forest...	Gov. T. J. Jarvis.	1881 to 1883
J. W. Jones, M.D., President.....	Wake Forest...	State Society	1883 to 1889
John McDonald, M.D.....	Washington....	State Society	1883 to 1889
S. H. Lyle, M.D.....	Franklin.....	Gov. T. J. Jarvis.	1883 to 1885
W. G. Simmons, Chemist.....	Wake Forest..	Gov. T. J. Jarvis.	1883 to 1885
Arthur Winslow, Civil Engineer..	Raleigh.....	Gov. T. J. Jarvis.	1883 to 1886
R. H. Lewis, M.D.....	Raleigh.....	State Board	1884 to 1893
Thomas F. Wood, M.D., Secretary.	Wilmington....	State Society	1885 to 1887
William D. Hillis, M.D.....	Asheville.....	State Society	1885 to 1891
Arthur Winslow, Civil Engineer....	Raleigh.....	Gov. A. M. Scales	1885 to 1891
W. G. Simmons, Chemist.....	Wake Forest...	Gov. A. M. Scales	1885 to 1887
J. H. Tucker, M.D.....	Henderson.....	Gov. A. M. Scales	1885 to 1887
R. H. Lewis, M.D., Secretary.....	Raleigh.....	State Society	1887 to 1897
H. T. Bahnson, M.D., President...	Winston-Salem.	State Society	1887 to 1893
Arthur Winslow, Civil Engineer...	Raleigh.....	Gov. A. M. Scales	1887 to 1888
W. G. Simmons, Chemist.....	Wake Forest..	Gov. A. M. Scales	1887 to 1889
J. H. Tucker, M.D.....	Henderson.....	Gov. A. M. Scales	1887 to 1889
J. L. Ludlow, Civil Engineer.....	Winston.....	Gov. A. M. Scales	1888 to 1891
J. H. Tucker, M.D.....	Henderson.....	Gov. D. G. Fowle	1889 to 1891
F. P. Venable, Ph.D., Chemist....	Chapel Hill....	Gov. D. G. Fowle	1889 to 1891
J. L. Ludlow, Civil Engineer.....	Winston.....	Gov. D. G. Fowle	1889 to 1893
J. A. Hodges, M.D.....	Fayetteville....	State Society	1889 to 1892
J. M. Baker, M.D.....	Tarboro.....	State Society	1889 to 1893
J. H. Tucker, M.D.....	Henderson.....	Gov. T. M. Holt..	1891 to 1893
F. P. Venable, Ph. D., Chemist..	Chapel Hill....	Gov. T. M. Holt..	1891 to 1893
J. L. Ludlow, Civil Engineer.....	Winston.....	Gov. T. M. Holt..	1891 to 1892
*Thomas F. Wood, M.D., Secretary	Wilmington....	State Society	1891 to 1897
George G. Thomas, M.D., Pres...	Wilmington....	State B. Health ..	1892 to 1897
S. Westray Battle, M.D.....	Asheville.....	State Society	1891 to 1895
W. H. Harrell, M.D.....	Williamston....	State Society	1892 to 1895
John Whitehead, M.D.....	Salisbury.....	State B. Health..	1893 to 1895
W. H. G. Luvac.....	White Hall....	Gov. Elias Carr..	1893 to 1895
F. P. Venable, Ph.D., Chemist....	Chapel Hill....	Gov. Elias Carr..	1893 to 1895
John C. Chase, Civil Engineer....	Wilmington....	Gov. Elias Carr..	1893 to 1895
R. H. Lewis, M.D., Secretary....	Raleigh.....	Gov. Elias Carr..	1893 to 1895
W. P. Beall, M.D.....	Greensboro....	Gov. Elias Carr ..	1894 to 1897
W. J. Lumsden, M.D.....	Elizabeth City.	Gov. Elias Carr ..	1895 to 1897
John Whitehead, M.D.....	Salisbury.....	State Society	1895 to 1897
W. H. Harrell, M.D.....	Williamson.....	State Society	1895 to 1897
W. P. Beall, M.D.....	Greensboro....	Gov. Elias Carr ..	1895 to 1897
R. H. Lewis, M.D., Secretary....	Raleigh.....	Gov. Elias Carr ..	1895 to 1897
F. P. Venable, Ph.D., Chemist....	Chapel Hill....	Gov. Elias Carr ..	1895 to 1897
John C. Chase, Civil Engineer.....	Wilmington....	Gov. Elias Carr ..	1895 to 1897

*Died in 1892, leaving a five-year unexpired term, which was filled by the Board.

ROSTER OF MEMBERS—Continued.

Name	Address	Appointed by	Term
C. J. O'Hagan, M.D.	Greenville	Gov. D. L. Russell	1897 to 1899
John D. Spicer, M.D.	Goldsboro	Gov. D. L. Russell	1897 to 1899
J. L. Nicholson, M.D.	Richlands	Gov. D. L. Russell	1897 to 1899
R. H. Lewis, M.D., Secretary	Raleigh	Gov. D. L. Russell	1897 to 1899
A. W. Shaffner, Sanitary Engineer.	Raleigh	Gov. D. L. Russell	1897 to 1899
Charles J. O'Hagan, M.D.	Greenville	Gov. D. L. Russell	1899 to 1901
J. L. Nicholson, M.D.	Richlands	Gov. D. L. Russell	1899 to 1901
Albert Anderson, M.D.	Wilson	Gov. D. L. Russell	1899 to 1901
R. H. Lewis, M.D., Secretary	Raleigh	Gov. D. L. Russell	1899 to 1901
A. W. Shaffer, Civil Engineer	Raleigh	Gov. D. L. Russell	1899 to 1901
George G. Thomas, M.D., President	Wilmington	State Society	1899 to 1901
S. Westray Battle, M.D.	Asheville	State Society	1899 to 1901
H. W. Lewis, M.D.	Jackson	State Society	1899 to 1901
H. H. Dodson, M.D.	Milton	State Society	1899 to 1901
R. H. Lewis, M.D., Secretary	Raleigh	Gov. C. B. Aycock	1901 to 1907
W. P. Ivey, M.D.	Lenoir	Gov. C. B. Aycock	1901 to 1907
George G. Thomas, M.D., President	Wilmington	Gov. C. B. Aycock	1901 to 1905
Francis Duffy, M.D.	Newbern	Gov. C. B. Aycock	1901 to 1905
J. L. Ludlow, Civil Engineer	Winston	Gov. C. B. Aycock	1901 to 1905
S. Westray Battle, M.D.	Asheville	State Society	1901 to 1907
H. W. Lewis, M.D.	Northampton	State Society	1901 to 1907
W. H. Whitehead, M.D.	Rocky Mount	State Society	1901 to 1905
J. L. Nicholson, M.D.	Richlands	State Society	1901 to 1905
J. L. Ludlow, Civil Engineer	Winston	Gov. C. B. Aycock	1903 to 1909
J. Howell Way, M.D.	Waynesville	Gov. R. B. Glenn	1905 to 1911
W. O. Spencer, M.D.	Winston	Gov. R. B. Glenn	1905 to 1911
George G. Thomas, M.D., Pres.	Wilmington	State Society	1905 to 1911
Thomas E. Anderson, M.D.	Statesville	State Society	1905 to 1911
R. H. Lewis, M.D.	Raleigh	Gov. R. B. Glenn	1901 to 1913
E. C. Register, M.D.	Charlotte	Gov. R. B. Glenn	1901 to 1913
David T. Tayloe, M.D.	Washington	State Society	1907 to 1913
*Jas. A. Burroughs, M.D.	Asheville	State Society	1907 to 1909
J. E. Ashcraft	Monroe	State B. Health	1909 to 1913
J. L. Ludlow, Civil Engineer	Winston-Salem.	Gov. W. W. Kitchin	1911 to 1917
J. Howell Way, M.D., President	Waynesville	Gov. W. W. Kitchin	1911 to 1917
W. O. Spencer, M.D.	Winston-Salem.	Gov. W. W. Kitchin	1911 to 1917
Thos. E. Anderson	Statesville	State Society	1911 to 1917
Chas. J. O'H. Laughinghouse	Greenville	State Society	1911 to 1917

*Died leaving unexpired term.

HONORARY FELLOWS, MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA.

Name	Address
H. T. Bahnson	Winston-Salem.
W. J. Love	Wilmington.
W. I. Royster	Raleigh.
George G. Thomas	Wilmington.
Francis Duffy	Newbern.
F. J. Haywood	Raleigh.
Geo. W. Long	Graham.
R. H. Speight	Whitakers.
R. J. Noble	Selma.
D. W. Bullock	Wilmington.
L. H. Hill	Germantown.
L. J. Picot	Raleigh.
R. H. Lewis	Raleigh.
I. W. Faison	Charlotte.
C. E. Moore	Wilson.
Henry Tull	Kinston.
J. W. McNeill	Fayetteville.
W. P. Beall	Greensboro.
T. E. Anderson	Statesville.
R. H. Hargrove	Robertsonville.
C. M. Van Poole	Salisbury.
H. T. Trantham	Salisbury.
D. M. Prince	Laurinburg.
A. W. Knox	Raleigh.
J. M. Baker	Tarboro.
J. L. Nicholson	Richlands.
T. T. Misenheimer	Morven.
M. H. Fletcher	Asheville.
H. Bascom Weaver	Asheville.
Jno. Hey Williams	Asheville.
Williard P. Whittington	Asheville.
T. F. Pharr	Concord.
Robt. S. Young	Concord.
L. M. Archey	Concord.
A. R. Wilson	Greensboro.
L. W. Hunter	Sardis.
Jno. R. Irvin	Charlotte.
C. A. Misenheimer	Charlotte.
W. C. Galloway	Wilmington.
Richard Dilliard	Edenton.
J. D. McMillan	Edenton.
John Whitehead	Salisbury.
Kemp P. Battle, Jr.	Raleigh.
R. A. Smith	Goldsboro.

HONORARY MEMBERS, MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA.

Name	Address
L. McL. Tiffany	Baltimore, Md.
W. W. Keen	Philadelphia, Pa.
J. Allison Hodges	Richmond, Va.
R. L. Payne	Norfolk, Va.
J. N. McCormack	Bowling Green, Ky.
J. C. Walton	Richmond, Va.
R. L. Payne, Jr.	Norfolk, Va.
I. W. Ludlow, C. C.	Winston-Salem.

June, 1911. Total membership Medical Society of the State of North Carolina including 31 honorary members, 954. Of the 98 counties of the State the Physicians of 96 counties are organized in county societies in affiliation with and component branches of the State Medical Society.

412 members registered at 1911 session. This number does not include applicants for license, visitors, solicitors or other than enrolled members.

OFFICERS AND COMMITTEES FOR 1912.

President—Dr. J. P. Munroe.....Charlotte
First Vice-President—Dr. Fletcher R. Harris.....Henderson
Second Vice-President—Dr. E. S. Bullock.....Wilmington
Third Vice-President—Dr. L. B. Morse.....Hendersonville
Secretary—Dr. Jno. A. Ferrell.....Raleigh
Treasurer—Dr. H. D. Walker.....Elizabeth City
Orator—Dr. H. D. Stewart.....Monroe
Essayist—Dr. J. T. Burrus.....High Point
Leader of Debate—Dr. J. H. Harper.....Snow Hill

COUNCILORS

First District—Dr. J. L. Spruill, Columbia.
Second District—Dr. K. P. B. Bonner, Morehead City.
Third District—Dr. G. L. Sikes, Salemburg.
Fourth District—Dr. M. M. Saliba, Wilson.
Fifth District—Dr. W. P. Holt, Duke.
Sixth District—Dr. R. L. Felts, Durham.
Seventh District—Dr. A. J. Crowell, Charlotte.
Eighth District—Dr. R. O. Dees, Greensboro.
Ninth District—Dr. D. J. Hill, Lexington.
Tenth District—Dr. M. L. Stevens, Asheville.

DISTRICTS BY COUNTIES AND COUNCILORS

First District—Dr. J. L. Spruill, Councilor, Columbia.
Currituck, Camden-Pasquotank-Dare, Chowan, Tyrell, Hyde, Perquimans, Gates.

Second District—Dr. K. P. B. Bonner, Councilor, Morehead City.
Hertford, Martin, Pitt, Bertie, Lenoir, Craven, Pamlico, Carteret.

Third District—Dr. G. L. Sikes, Councilor, Salemburg.
New Hanover, Onslow, Duplin, Sampson, Columbus.

Fourth District—Dr. M. M. Saliba, Councilor, Wilson.
Northampton, Halifax, Nash, Edgecombe, Johnston, Wilson, Wayne, Green.

Fifth District—Dr. W. P. Holt, Councilor, Duke.
Cumberland, Robeson, Scotland, Richmond, Montgomery, Moore, Harnett, Chatham, Hoke, Lee.

Sixth District—Dr. R. L. Felts, Councilor, Durham.
Wake, Franklin, Warren, Vance, Granville, Person, Caswell, Alamance, Orange, Durham.

Seventh District—Dr. A. J. Crowell, Councilor, Charlotte.
Anson, Union, Stanley, Mecklenburg, Cabarrus, Lincoln, Gaston, Cleveland, Rutherford.

Eighth District—Dr. R. O. Dees, Councilor, Greensboro.
Rockingham, Guilford, Randolph, Forsyth, Stokes, Surry, Yadkin, Wilkes.

Ninth District—Dr. D. J. Hill, Councilor, Greensboro.
Davidson, Caldwell, Davie, Rowan, Iredell-Alexander, Catawba, Burke, Avery.

Tenth District—Dr. M. L. Stevens, Councilor, Asheville.
Buncombe, McDowell, Madison, Haywood, Transylvania, Jackson, Macon-Clay, Cherokee, Graham.

MINUTES

Chairmen of Sections for 1913

Anatomy and Surgery—Dr. Henry Norris, Rutherfordton.

Materia Medica and Therapeutics—Dr. M. A. Royal, Yadkinville.

Physiology and Chemistry—Dr. I. Manning, Chapel Hill.

Obstetrics and Gynaecology—Dr. Wm. Spicer, Goldsboro.

Pathology and Microscopy—Dr. J. A. Caldwell, Salisbury.

Practice of Medicine—Dr. L. B. Newell, Charlotte.

Errata

Chairmen of Sections for 1913

Anatomy and Surgery—Dr. Henry Norris, Rutherfordton.

Materia Medica and Therapeutics—Dr. M. A. Royal, Yadkinville.

Physiology and Chemistry—Dr. I. Manning, Chapel Hill.

Obstetrics and Gynecology—Dr. A. B. Croom, Maxton.

Pathology and Microscopy—Dr. J. A. Caldwell, Salisbury.

Practice of Medicine—Dr. J. F. Patterson, Newbern.

Disease of Children—Dr. Yates Faison, Charlotte.

State Medicine and Sanitation—Dr. P. H. Ringer, Asheville.

Substitute for List Shown on Page 2

Hendersonville, N. C.

"Much to my regret I find it impossible to go to Hendersonville. Several important cases make it necessary for me

MINUTES
of the
North Carolina Medical Association.
Fifty-Ninth Annual Session, Held at Hendersonville, June 18-20, 1912.

Invocation by Rev. A. L. Stafford.

Address of Welcome by Mr. Raginald Wilcox, Flat Rock.

Address of Welcome on behalf of Henderson-Polk Medical Society by Dr. Arthur R. Guerard, Hendersonville.

Response to Address of Welcome by Dr. C. O'H. Laughinghouse, Greenville.

The President's Address, "The Profession and the State," Dr. A. A. Kent, Lenoir.

Papers read at the morning session as follows:

"Causes and Results of Carelessness in Prescribing," Dr. Wm. S. Jordan, Fayetteville.

Discussed by Dr. Sikes.

"Some Observations of the Treatment of Syphilis," Dr. C. O. Abernethy, Raleigh.

Discussed by Drs. Glenn, Crowell and Burrus.

Address by Jno. E. Ray, Superintendent Blind Institute, Raleigh.

Convention here took a recess until 2:30 P. M.

Afternoon Session.

On opening of session the Secretary read the following telegram from Dr. Stuart McGuire of Richmond, Va.:

Richmond, Va., June 17th.

Dr. J. Howell Way,
Hendersonville, N. C.

"Much to my regret I find it impossible to go to Hendersonville. Several important cases make it necessary for me

to remain in Richmond. Please notify Dr. Parrott. Present my excuses to the Society."

STUART McGUIRE.

"The Uses of Electricity in Medicine," Dr. R. L. Pittman, Fayetteville.

"Acute Rheumatic Fever with Endocardial Complication and its Treatment," Dr. Wm. T. Mitchell, Shelby.

Discussed by Drs. Faison and Ringer.

"The Treatment of Amebic Dysentery," Dr. Roscoe D. McMillan, Red Springs.

Discussed by Drs. Stiles, S. T. Harris and David Garrison.

"Review of Work on Immunity to Tuberculosis," Dr. Paul Paquin, Asheville.

Discussed by Dr. Julian.

"Section Pediatrics," remarks by Dr. Ringer, Asheville.

"Adenoids in Infancy," Dr. Lewis W. Elias, Biltmore.

Discussed by Dr. Briggs.

Society took a recess until 8:00 o'clock.

EVENING SESSION.

"Angio Neurotic Hemorrhage from the Kidney," Dr. R. L. Payne, Norfolk, Va.

Discussed by Drs. Parrott and Royster.

"A Report of Five Hundred Cases Treated with Anti-Rabic Virus at the State Laboratory of Hygiene," Dr. C. A. Shore, Raleigh.

Discussed by Drs. Stiles, Lewis, Rankin, McBrayer, Royster.

"Remarks on the Management of Pyothorax," Dr. J. M. Parrott, Chairman, Kinston.

Discussed by Drs. Joe Graham and S. T. Harris.

"Hippocrates, Surgeon," Dr. K. P. B. Bonner, Morehead City.

"Strangulated Hernia with Report of Cases."

"Strangulated Hernia in Infants," Dr. S. McKee Tucker, Raleigh.

Discussed by Drs. Royster, Graham and Payne.

The Society here took a recess until 9:30 Wednesday morning.

Wednesday Morning Session.

The President in the chair.

"The Practical Use of Iodine in the Preparation of the Skin in Operative Cases, Drs. D. W. and Ernest S. Bullock, Wilmington.

Discussed by Drs. Payne, Booth, Sanders and Harris.

"An Operative Plan for Correction of Club Foot," Dr. Joseph Graham, Durham.

Discussed by Drs. Williams and Strong.

"The Treatment of Pellagra," Dr. E. H. Bowling, Durham.

Discussed by Drs. Brown, Dickinson, Weaver, Nisbet, Walton, Siler and Faison.

Conjoint Session State Board of Health, with N. C. Medical Society.

Dr. Way, the President, in the chair.

Report by Secretary, Dr. Rankin.

Report by Dr. Ferrell, Secretary Hook-Worm Commission.

Report by Dr. Shore.

Reports discussed by Dr. Stiles.

Upon motion of Dr. Spencer, reports adopted.

Society took a recess until 2:30 P. M.

Wednesday Afternoon Session.

"A National Department of Health: The Provision of the Owen Bill," Dr. L. B. McBrayer, Health Officer, City of Asheville.

Discussed by Drs. Laughinghouse, Graham, McMullan, Way, Royster, Stiles, Lewis, Stewart, Rankin.

Society took a recess until 8:00 P. M.

Wednesday Evening Session.

Resolution by Dr. Lewis.

Report of Obituary Committee.

Oration by Dr. Jno. Hill Tucker, Charlotte: "The Doctor."

Essay, "The Cancer Problem," Dr. Richard N. Duffy, New Bern.

Recess taken until 9:30 Thursday morning.

Thursday Morning Session.

"Ideals and Methods in State Medicine," Dr. W. S. Rankin, Secretary State Board of Health.

Discussed by Drs. Walton, Stiles, Bell, Nisbet.

"The Medical Profession's Responsibility for the Use of Proprietary and Patent Medicines," Dr. Lucius N. Glenn, County Superintendent of Health of Gaston County.

Discussed by Dr. Tucker.

"Three Decades in Medicine, a Retrospect and a Prophecy," Dr. J. C. Walton, Richmond, Va.

"Eugenics and Conservation," Dr. F. R. Harris, Henderson.

Discussed by Drs. Hays, Anderson, Morse, Ferrell, Galloway, Stiles, Seale, Harris.

"Tuberculin Dosage, A Further Study of the Value of a Ratio Method of Dosage Increase," Dr. L. B. Morse, Hendersonville.

Discussed by Dr. Paul Pacquin.

"Dementia Præcox with Special Reference to the Pre-Dementia Stage," Dr. Paul V. Anderson, Richmond, Va.

Discussed by Drs. Hardy, Graham, Bell and Kent.

Society here took a recess until 2:30 P. M.

THURSDAY AFTERNOON SESSION.

Report read by Dr. Hays, Secretary Board of Medical Examiners.

"Some Observations on Tumors of the Brain, with report of Cases," Dr. J. P. Munroe, Charlotte.

"A Plea for Better Obstetric Work," Dr. J. W. Neal, Monroe.

Discussed by Drs. Garrison, Rankin, Faison and Stanton.

Election of Examiners for Board of Nurses.

Report of House of Delegates. Motion received and adopted.

Report by Committee on the President's Address.

Installation of the President-Elect.

The following papers read by title:

"Causes and Results of Carelessness in Prescribing," Dr. Wm. S. Jordan, Fayetteville.

"A Plea for More Thorough Study of Materia Medica and Therapeutics," Dr. K. G. Averitt, Cedar Creek.

"Statistics of the Serum Treatment of Typhoid Fever," Dr. S. Highsmith, Fayetteville.

"The Uses of Electricity in Medicine," Dr. R. L. Pittman, Fayetteville.

"Acute Rheumatic Fever with Endocardial Complication and its Treatment," Dr. Wm. F. Mitchell, Shelby.

"Review of Work on Immunity to Tuberculosis," Dr. Paul Paquin, Asheville.

"Amboebic Dysentery in Children," Dr. J. V. McGougan, Fayetteville.

"Influence of Public Health on Pediatrics," Dr. C. O'H. Laughinghouse, Greenville.

"Infant Stools in Health and Disease," Dr. E. J. Wood, Wilmington.

"A Study of the Renal Epithelium in Acute Experimental Nephritis and the Relation which Exists between the Epithelial Changes and the Total Output of Urine," Dr. Wm. DeB. MacNider, Chapel Hill.

"Pathology of Pericolitis Membrana and of the Ligamentum Nephrocolieum," Dr. Addison G. Brenizer, Charlotte.

"Surgery as a Last Resort; the Surgeon's Responsibility in Such Cases," Dr. D. T. Tayloe, Washington.

"Diseases of the Kidneys and Their Relation to Surgery," Dr. J. F. Highsmith, Fayetteville.

"Fright as a Factor in Shock," Dr. Julian Baker, Tarboro.

"Congenital Hemangiomata," Dr. Henry Norris, Rutherfordton.

"Tumors of the Face and Neck," Dr. E. T. Dickinson, Wilson.

"Drainage of an Infected Knee Joint Without Subsequent Ankylosis," Dr. Harlan Shoemaker, Shelby.

"Personal Experience in the Surgical Treatment of Goitre," Dr. Stuart McGuire, Richmond, Va.

"The Opposition to a National Department of Health," Dr. Cyrus Thompson, Jacksonville.

"The Responsibility of the County Medical Society to County Public Health," Dr. A. Bascom Croom, Maxton.

"Field Work in Tuberculosis," Dr. Mary E. Lapham, Highlands.

"Fallacy of Polypharmacy in the Practice of Medicine," Dr. Thurman D. Kitchin, Scotland Neck.

"The Feeble-Minded from a Medical Standpoint," Dr. Ira M. Hardy, Washington.

"The Treatment of Tuberculosis," Dr. C. A. Julian, Thomasville.

"Some Suggestions for the General Practitioner," Dr. E. G. Moore, Elm City.

"The Milk Supply and Preventable Diseases," Dr. T. A. Mann, Durham.

"Foreign Bodies in the Larynx, Trachea and Bronchi," Dr. A. M. Whisnant, Charlotte.

"The Life of the Physician," Dr. N. B. Adams, Murphy.

"Arteriosclerosis," Dr. M. Eugene Street, Glendon.

"The Importance of Chemistry and Physiology to the General Practitioner," Dr. Robt. H. Lafferty, Charlotte.

"Principles of Dietetics and Nutrition," Dr. I. C. Manning, Chapel Hill.

"Noguchi's Cutaneous Reaction for Syphilis," Dr. J. W. Squires, Charlotte.

"The Pupil and its Significance in Pulmonary Troubles," Dr. C. N. Peeler, Charlotte.

"Work of Authorities on Immunity Against Tuberculosis," Dr. Paul Paquin, Asheville.

"Blood Pressure as an Aid to Diagnosis," Thomas Wright, M.D., Charlotte.

"Some Remarks on Cervical Lacerations," Dr. G. M. Cooper, Clinton.

"Uterine Hemorrhage Frequently Seen in Pellagra," Dr. Charles H. Peele, Warrenton.

"Significance of Leucorrhea," Dr. A. H. Rose, Smithfield.

"The Nervous Phenomena of Pelvic Diseases," Dr. W. Hopton Smith, Goldsboro.

"Some Reflex Disturbances Resulting from Uterine Displacements; the Diagnosis and Treatment; report of Case," Dr. T. Marshall West, Fayetteville.

"The Influence of Habit in the Cause of Diseases and the Necessity of Discipline in the Cure of Diseases," Dr. H. D. Stewart, Monroe.

"An Interesting Case of Hyperemesis Gravidarum," Dr. Albert D. Parrott, Kinston.

"Notes from a General Practitioner's Records," Dr. J. R. Paddison, Oak Ridge.

"Cæsarean Section," Dr. J. T. Burrus, High Point.

"Placenta Previa," Dr. Sam A. Glenn, Monroe.

"The Frequency of Appendicitis During Pregnancy; Necessity for Operation; report of Case," Dr. John Q. Myers, Charlotte.

"Essentials in the Successful Practice of Obstetrics," Dr. G. L. Brown, Hendersonvillle.

"Obstetric Antisepsis," Dr. R. L. Payne, Monroe.

"Obstetrics in General Practice," Dr. J. F. Able, Waynesville.

"Mole Pregnancy, with report of two Cases," Dr. L. E. Guin, Waxhaw.

"Some Thoughts for Home Consumption," Dr. B. R. Hunter, Huntersville.

"Field Surgery," Dr. W. C. Bostic, Forest City.

The Fifty-Ninth Annual Session of the Medical Society of the State of North Carolina called to order by Dr. L. B. Morse, of Hendersonville, Chairman Committee of Arrangements.

Invocation.

REV. A. L. STAFFORD.

Let us stand for a moment's prayer.

We thank Thee, Oh Heavenly Father, for this occasion which brings us together this morning, for its privileges, its opportunities, its blessings and its responsibilities as well. We praise Thee for this splendid company of men who have come together from the different points of the compass, that they may spend a few days in our midst; that they may discuss matters, devise plans and inaugurate new movements whereby they may be better qualified to serve their day and their generation. We thank Thee, our Father, for the glorious discoveries which have been made and for the marvelous results which have been achieved in the medical world within the past few years; and we pray that this work may go on until "our people shall be free from the scourages which dwarf the physical, mental and moral and spiritual life of our citizenship. We thank Thee, our Father, for every faithful physician. Many a time they go through Summer's heat and Winter's cold; many a time, our Father, they go at the dead hours of midnight, to the homes of the very poorest, as well as to the homes of the rich, that they may relieve human suffering; many a time their presense in the sick room is like that of the presence of a ministering angel.

Do Thou let Thy blessings rest graciously and abundantly upon this body of physicians who have come to spend a few days in our midst. May their stay in our midst be pleasant and profitable to us all. We pray Thee that Thou wilt lead them in all of their deliberations, and grant, Oh God, that Thy Spirit may direct every movement which they undertake. We ask it in Jesus' name, Amen.

Address of Welcome.

Mr. Reginald Wilcox, Flat Rock.

Mr. President, and Gentlemen of the North Carolina Medical Society:

As I came along in an automobile just now, by the side of that dear Doctor who came to get me, as he was dressed all in white, I could not help thinking of the extreme between us, and the hope that our outward exterior did not in any way denote our interior character, and yet I felt that I had sooner have that than any sort of hypocrisy or pretense; and so, in beginning what few words of welcome to you I have to say, I want to clearly weigh anything that seems to be sham or pretense or hypocrisy in any standing here before you. I do not want you, in other words, to think that you are going to get some great oratorical effort, because you are not, and it was not for that purpose that the Medical Society of Henderson County appointed me to deliver to you this address of welcome, because they knew what I was and what I was capable of; and so I had to think that they meant something else, for they knew the graces of the orator's art were to me unknown. It was one of the things I was never guilty of perpetrating; therefore I think it was this: that they said, in looking over the matter, "What we want these physicians and their friends who come to Hendersonville to feel and to know and to realize, not as something that is merely a piece of red tape that has to be done, but we want them to realize how thoroughly and completely welcome they are in our midst, and therefore we think we will pick out some one who, from his profession, ought to, at least, tell the truth, and whom they may think is telling the truth when he tells them how welcome they are." That, I feel, gentlemen, is the reason for my appointment to this honorable position—for honorable it is.

There are times, I know, as we look back in our lives' histories, there are paths in those pathways of life to which we can point back with particular pleasure and pride, and this is going to be one of those times with me, because there is no body of men I would sooner address; I would sooner help to make feel welcome, than a body of physicians. There is no body, no profession—not even my own—that I think numbers among its personnel such self-sacrificing, noble characteristics as physicians.

I have had a great deal to do with them. My own profession calls me, oftentimes, to the bedside of the sick and the dying, and whenever I am there I see some physician there—as just mentioned in that beautiful prayer of the gentleman who preceded me—as "ministering angels."

Now we know there is no man so trusty as the physician; there is no man, usually, so worthy of our trust as the physician; he is a member of our family; he must be. And how often I have been called upon to go with some doctor way out on the mountains to some poor person from whom they could not expect any remuneration. Cold drives, that would sometimes take them a whole day from their living here; and I have never, in my ministry, asked one doctor to minister to one poor person that they have not gladly and willingly done it.

Now, my brethren, that speaks well for any body of men, and I say that Hendersonvile is proud to have you with us. We canot do to much for you, and the little we can do is going to be done with our whole heart and our whole soul in it. We want you to think of Hendersonville with pleasant memories. We want you to love and respect her, and you will, if you can look into our hearts and realize that we are offering you all that we have, little as that all may be.

What have we to offer you in the way of natural wealth? In the way of beautiful scenery? Beautiful climate? We want you to realize it; to know it; to make it your own; and

we want to so impress upon you what we, the people, think of you; how we, the people, love you, because you are physicians; because we love the whole body of physicians. We want you to feel that you will want to come here again, individually and with your families.

What more can I say? I might, indeed, go on and speak of all your glories, but they are too many for me to express; I might try to show you what I personally feel about the physicians, and I might try to show you, perhaps, what I think are some of the things you might do for the welfare of the State; some of the great things you are doing; but all those you know, and I wish simply to say to you, not with words of flowery metaphor or anything of that sort, but just in the simplest, most stammering words that I can get out to say, you are welcome. You are thoroughly welcome. You are welcome to all that we have; to all that we are; and I hope that you will take what I say in the spirit in which Henderson County and Hendersonville, and the doctors of Henderson County appoint me to say to you, that you will take it, not in sham pretense or red tape, but that we love to have you here. There is nobody of men that could give us the honor that you do by coming. We throw our homes and our hearts open to you, and we trust you will have a good time, and you are thoroughly welcome here. (Applause).

Address of Welcome on Behalf of the Henderson-Polk County Medical Society.

DR. ARTHUR R. GUERARD.

Mr. Chairman, Ladies and Gentlemen. of the Medical Society of the State of North Carolina:

The silver-tonguer orator who preceded me, my esteemed friend, the Rev. Mr. Wilcox, has welcomed you, for the citizens of Hendersonville, to this our mountain metropolis, in language of which he, from long habit of apostolic declamation, is a past master but which it is not in the power of a humble disciple of Esculapius to command. But if "from the abundance of the heart the mouth speaketh," then my words, on behalf of the Henderson-Polk County Medical Society—though

"I am no orator, as Brutus is,
But, as you know me all, a plain blunt man."

Should read! unaccustomed flights of oratory to bid you cordial welcome.

We dwellers in the Southern mountains have been said to possess certain peculiarities which tend to make us a people apart; we have been pronounced proud, independent and clannish—traits due, perhaps, to some inherent quality of the mountain air, or derived from our ancestors, the genuine highlanders, who after the last Stuart rebellion, emigrated from Scotland to this country, and become, many of them at least, the original settlers of these hills. But however this may be, some of the characteristics ascribed to the Southern mountaineers are true of us today. We are self-contained and independent, good fighters and honest haters; but we are also faithful to our traditions, loyal to our friends, and hospitable to our guests.

It is my pleasant duty today, in the name of my clan-brothers of the "over hills of Ottaray," to greet you, our allies from the lowlands and the underhills, with a real highland welcome, to extend to you the hand of friendship and fraternity, and to say to you how happy we are to have the pleasure of entertaining you on this felicitous occasion—the most felicitous which our County Society has ever enjoyed, as it is the first time that the august Medical Association of our State has done us the honor of holding its annual convention here, where we may all meet you face to face and commune with you at our own firesides. We also wish to thank you for the opportunity you have given us of exhibiting and extolling to many charms and advantages of this section of the mountains in which we live, and which we, like all true highlanders, think cannot be excelled or even equalled anywhere else. Our hearts are in the highlands, wherever we roam, and to tell you how pleased we are to have the chance of converting you to our way of thinking.

Gentlemen, in this God-favored spot you can want for nothing to make you happy and contented, and sensible of the joy of living, every moment of your life. And—

"Why should you want? Behold, the earth hath roots;
Within this mile break forth a hundred springs,
The oaks bear mast, the briars scarlet hips;
The bounteous housewife, nature on each bush,
Lays her full mess before you."

The geological and meterological conditions of this plateau, the composition of the soil, consisting of rich, sandy loam, with a subsoil of clay, embodied on meter-morphic granite, affording good drainage and tillage, and prize-winning crops of fruits, vegetables and grain, the situation upon a high tableland at the golden mean of altitude and latitude, and yet a sufficient distance from the surrounding higher mountains to avoid their steep sides and fog-laden valleys, but which serve,

nevertheless, to protect it from severe storms, the purity of the air and water, and the equability of the climate, in which there are no extremes of temperature, no hot nights or enervating days in summer, but cold nights which purify the atmosphere with abundance of warm sunny days in winter; and finally the scenery surpassing that of Switzerland in its picturesques landscape effects, under skies that rival those of Itlay in their azure tints. I say that these unparalleled natural advantages constitute the joy of living in this region of country —they make life wholesome, comfortable and happy at all seasons of the year. * * * * *

But while inviting you to share with us these God-given bounties of nature, and to partake of the hospitality of our homes, we are moved, on this occasion, to have a heart to heart talk with you about the ideals and opportunities of our profession today and in the future, and more especially that oldest branch of our profession in which we are all alike interested, but which is apparently being much neglected at present. I refer to the General Practice of Medicine.

There is no calling or profession, as everyone will admt, and as we are proud to acknowledge, that has higher ideals or greater opportunities than the practice of medicine. No man can look back with such exalted pride to the history of the past as the medical man. And if we may judge the future by the past—if the records of days gone by are any indication of triumphs in the days to come—if *noblesse oblige* is our heritage of great deeds—then no man can look forward to the future, whose history he is helping to make, with such lofty inspiration. No man has such profound obligations to the present in which he lives as the general practitioner of medicine.

And yet we hear the opinion sometimes expressed that the day of the doctor is doomed, and more particularly it is said of the general practitioner that he is destined soon to loose his

occupation entirely, because of the rapid advance of medical science. As this assertion strikes at the very root of our profession, we should refute it at once; for silence gives consent.

Now it is true, no doubt, that with the growing tendency of the times toward exclusive specialism, with the marked development of progressive surgery, and with the still more evident expansion of modern sanitary science and preventive medicine, not to speak of the so-called new dispensation treatment, Christian Science, divine healing, hypnotism, massage, osteopathy, hydropathy, and all the other cultsopathies, too numerous to mention, nor of the ever-swelling hosts of imposters, advertising quacks and charlatans, it must be admitted that it is becoming more difficult every day for physicians to make a living, and physicians, of course, like others, must live. But granting this to be so, and even conceding another self-evident fact that the profession of medicine is much over-crowded, with mediocre at least. Is it not also true of all other professions or business undertakings in which one may engage at the present time, that people generally are finding it increasingly difficult to live? We are no worse off in this respect, then, than everybody else is, and has been for the last twelve or fifteen years or more.

But that the doctor will soon be deprived of his employment by reason of the advance in medical science, because there will be nothing more left for him to do, is not true. It is absurd and far-fetched. From the standpoint of humanity, doubtless, this were a consummation devoutly to be wished for, and the medical profession itself has unselfishingly done, and is constantly striving to do everything in its power to further this end by the prevention of the spread of disease; but the fulfillment of such a hope is in the dim and distant future, if at all it be attainable. So far, indeed, from its being true that the progress of medical science has closed any doors to the doctor, it can be shown to be the fact that every great discovery which

has been made in medicine has opened to the practitioner a score of new opportunities.

Take, for instance, the science of bacteriology, with its offspring, preventive medicine. Have the establishment of the cause of infection, the *germ theory*, and the possibility of arresting and preventing the spread of many diseases, the elaboration of *the theory of phagocytosis*, or resistance to infection through groups of body cells which war against the invading germ, and the farther modification of *the theory of alexius*, or substance found in the body which antagonize the germ poisons and thus aid the worried cells in their defence against disease, have these discoveries concluded the subject? Or, have they not disclosed to view a long vista of other findings, including *antitoxins, vaccines, opeonius, agglutenins*, and the like, and the end not yet in sight?

Again, witness the results in the department of surgery. Has Lestor's development of the antiseptic treatment of wounds narrowed or reduced the field of surgical work? Or, has it not indeed filled the world with surgeons, and rendered many operations practicable, even for the general practitioner, that were deemed impossible before.

And again, in the latest science of Chimatacis: Have Ehrlich's recently published investigations in this new field, viz.: the peculiar attraction for bacterica which is possessed by certain chemical substances and compounds, and his remedy, Salversan, which has given us hope of being able to cut short the treatment of one of the greatest scourages of the human race, have these investigations closed this region of research? Or, have they not rather opened up a vast stretch of unexploited territory for further investigation and discovery? Wassermann's experiments in Cancer are already bearing fruit apparently, on this line.

Then in the broad domain of general practice, how many more fields are there to explore, how many more problems are

there to solve, regarding a number of the most prevalent and fatal affections! Tuberculosis, despite all our efforts to the contrary, still carries off yearly by thousands the very flower of our flock. Pneumonia continues to baffle us now much as it did our predecessors in the centuries past. Measles, whooping cough, scarlet and typhoid fever are yet wide-spread and serious epidemic diseases. The social evil with its concomitant infection is no less common and disastrous than formerly. Cancer, if anything, is on the increase. And how much have we still to learn about many organic diseases, nervous and mental affections, acute and chronic joint diseases, kidney degenerations, arteriosclerosis, autointoxication, and other obscure and troublesome disorders.

The science of medicine is undoubtedly advancing; it has passed many triumphs in the past, and it is employing all the means at its disposal at present to make further conquests, but there is still much more to be done. While scientific medicine, however, is progressing, practical medicine, on the other hand, is lagging behind. It has already fallen far short in the application of principles and facts that have long been established. In this branch of our profession, therefore, there is an urgent call to higher things, a call which earnest men will hear and honest men will heed. If we expect to share in the triumphs which await the advance of science, we must be better equipped, we must have wider knowledge and greater skill. If we hope to keep our patients from slipping through our hands unhealed and unsatisfied, to become, perhaps the dupes of fraud and quackery, we must possess broader training and experience over the whole field of medicine.

The field of medicine, unquestionably has grown so large and comprehensive that it is next to impossible for any one one man to cover it completely. But there is, nevertheless, a great deal that the general practitioner can and should do which is now being neglected. The manifestations of disease are as

wide as they are various. They are not so exact or circumscribed as to demand in every case the application of exclusive specialism—specialism to the exclusion of general practice. The general practitioner, of course, is not expected to be an expert bacteriologist, physicist, chemist, or surgeon, he may not be capable of making a Widal test, or of using the X-ray, or of analyzing the stomach contents; he may not be able to perform a difficult surgical operation, a laparotomy or thyroidectomy. But he should be able at least to understand the principles upon which these processes and operations are based, and, above all, he should be in close touch with the man who can do the work.

Nor is there any reason why he should not do a certain amount of specializing himself, without interfering with his general practice. There is no doubt but that if different physicians in a community, as some one has suggested, would each one devote himself to some special study (as of the chest, nose and throat, the genito-urinary tract, the alimentary canal, children's diseases, etc.), until he became recognized as a local authority, in his particular line of general practice, and then would consult frequently with his brother physicians, there can be no doubt but that much mutual benefit, esteem for one another, and self-respect, as well as public gain, would accrue from such co-operation. Not that it is proposed, indeed, to supplant the word of the regular specialist, nor is it at all likely that this would happen. For while the field of the one is restricted, already well-stocked and highly cultivated, that of the other is broad, much neglected, and in need of entensive cultivation.

The fact of the matter is that these two groups of medical men, the scientific and the practical, might well be more mutually helpful to one another than they are. The scientific man is too exclusively scientific just as the practical man is too exclusively practical, and the result has been unfortunate for

both. Research and practice are ready inter-dependent, and they shaould be brought into closer relationship with each other. The practitioner should entertain something more than a mere lukewarm sympathy, a sort of benevolent toleration, as it often appears to be, for the investigator; he should cultivate not only an intelligent appreciation of scientific work, then making it of greater practical significance, but also by his own work he should endeavor to convert its achievements into actual practice. And at the same time, of course, the scentific man, who presumbaly has had previous experience in general practice, should show his continued interest in classical work by helping and stimulating the practical man to do better and more scientific routine work; for it is upon the efficiency and accuracy of this work, after all, that he has to depend for most of the material and data required in his special investigations. Besides, it may be taken as a foregone conclusion to be recognized as a scientific fact, that it is mutual aid and not mutual struggle that counts for most in life. We physicians are individuals with individual interests, but, as we know, it is necessary that there should be merged to a marked degree in the interests that we have mutually with our fellows. All our interests properly speaking, are mutual and must stand or fall together Though made up of many units, the strength of our profession is in its collective force. The best results in medicine, as in other affairs of life, can only be obtained by mutual assistance and co-operation.

The general practice of medicine, my conferes is, and has always been, the noblest and most useful branch of our worthy and valuable profession, the corner stone, the very foundation upon which it rests, and it offers, today and in the future, the highest ideals and greatest opportunities that were ever vouchsafed to any man, if he but give himself honestly and devotedly to the work. This work, however, must be done for its own sake, and not with the expectation of personal or pecuniary

reward. The doctor's gherdon is neither wealth nor fame, nor power, nor popular favor, nor individual gain—nor is it luxury, nor ease, nor cofort—it is war, a ceaseless struggle for humanity's sake, against disease and death, from the cradle to the grave.

Nevertheless, many of the most illustrations, names, that adorn the pages of history are to be found in the records of the rank and file of the medical profession. What were Harvey, and Hunter, and Jenner, and Lanes, and Ochterlong, and Lister, and Simpson, and Trousseau, and Ross, and Koch, and Behring, and Rout, and Osler, and Janeway, and Murphy, and Mazo, and Reed, and Carrol, and Gorgas, and a multitude of other physicians, dead and living, who have made an indelible impress upon the world, but general practitioners of medicine, forsooth? And what else, in our own South, were McDowell, and Sims, and Emmett, and Long, and many more?

These men are great, assuredly, but they were not born great, nor was greatness thrust upon them; they became great in the practice of the art and science of medicine solely by their own exertions. They enjoyed no special privileges of education, or opportunity, or aught else, save what was obtainable in their day and generation. They had their individual difficulties to overcome, their own battles to fight—just as we have now. But they surmounted these difficulties, they fought and conquered,—because of the faith that was in them, the strong and abiding faith in themselves and the ideals of their profession,—that kind of real faith which bears a man up on its hands over stones and ditches where others fall, and which finally becoming a habit of mind, a quality of life, enables him to conquer all obstacles.

These men became great—because they were borne onward to the goal of their high calling by the most powerful known force in the world, viz., *truth*—truth the only real reformer, the only genuine philanthropist, the only gospel that ever saved any

man or helped anyone to save others, actually and not theoretically. These men, like all others who have accomplished great things, did not set out deliberately to be heroes or doers of great deeds. They were simply looking for the truth. Pasteur and Koch, when they laid the foundations of bacteriology, were not working to benefit the human race; they were only searching for the truth as to the cause of disease, and in finding this they discovered a truth that has saved millions of human beings and animals. Metschnikoff and Buchner, when they revealed the facts relating to resistance of infection, were not incited by the desire to become famous, nor were they inspired by altruistic ideas about human suffering; they were merely looking for the truth, and when they found it, blessing and honor followed in its train. "Seek ye, therefore, first truth, and all these things shall be added unto you."

The practice of medicine has been revolutionized within the last generation, and we ourselves have been changed,—we must be changed, or *nolens volens* we shall be left behind in the struggle for existence,—amid the general evolution.

"Tempora mutanter, et nos mutamus in illio." If we are to keep pace with the times, we practitioners of medicine must advance with the scientific spirit of the age, in the trained and organized search for truth.

Thus also, by rendering in every case the best service available, that is by endeavoring always to find out the truth about our patients, and thus only, can we be true to them, or to ourselves—

> "This above all—to thine ownself be true;
> And it shall follow as the night the day,
> Thou canst not then be false to any man."

With such high ideals and great opportunities in the practice of our profession, it behooves us, on the opening of this convention, to hearten one another, to look into one another's faces and say, as Woodrow Wilson has so well said recently,

—and with these ennobling words of encouragement and hope I would close my address of welcome, in behalf of my brother physicians and myself.

"Friends and fellows: This is not a hopeless matter; look at the dark valley of human injustice out of which we have laboriously climbed by the blood and sacrifice of our ancestors; look at the light as it broadens about us; look at the accessible heights that are immediately in front of us; let us take heart for that work, that work that lives in our hearts, that connects us with everything that is sacred in the past, that throws aside the trivial circumstances of our day,—the little day in which our generation lives,—and remember that the glory of America (and more particularly of American medicine) is the glory of the sacrifice for humanity."

In conclusion let me repeat, ladies and gentlemen: Welcome, thrice welcome, to our hills, our homes, and our hearts! And may you enjoy rest, relaxation, recreation, and reinvigoration, in this *ozoniferous* mountain air!

Response to Address of Welcome.

Dr. Chas. O'H. Laughinghouse, Greenville.

Mr. Chairman, Ladies and Gentlemen:

I esteem it a privilege to be permitted the distinction of replying to such splendid addresses of welcome as have just been tendered this Society.

First: I want to thank the bird for his glorious song of welcome which is at this moment ringing in our ears. Whether he is on the program or not I do not know, but nothing can be more pleasing, more sincere or more gracious. Not only do the hills and air of this beautiful city exhilirate us and make us glad, but even the little winged fellows stop and give us in their own peculiar language a gladsome howdy-do, which seems to say our latch string is waiting for you to touch, and our doors for you are an open sesame.

Next I want to thank the Reverend Mr. Wilcox for his glorious welcome. In it there was such sincerity and such sweetness that I was deeply impressed with the fact that his ministerial cloth was indeed an outward sign of an inward grace.

As for Dr. Guerhard, it seems to me that if we can but take the advice that he has so eloquently handed out to us; if we can but imbibe the enthusiasm he has so splendidly expressed; if we can retain the serviceable information that he has so wisely and splendidly imparted to us, we will have in his address a sufficiency to more than repay us for all trouble, time and inconvenience that may have been incident to our journey here.

A few weeks ago it was my pleasure to take a trip out West. As I traveled through the State of West Virginia and observed the grandeur of her mountains, I naturally began to compare her with West Carolina. Further on my trip when I reached the Mississippi, the smooth and level lands of Eastern Carolina

came into my mind. I am proud to say that in the midst of all the rush, the wealth and the beauty of the West and North, —down in the bottom of my heart I could not help but thank my God that I yet had the privilege of being born and of coming back to the good old State of North Carolina.

God made our East, He arched it with blue skies, girded it with great waters, dotted it with forests of oak and pine, covered it with fertile plains laden with cotton, corn and smaller grain. The rain that puts the green into her vegetation is prayed for by all people. The sun that shines upon her is warm with smiles at the privilege of aiding her in what she grows.

The East is a material country, so rich in her productiveness that the very worms which destroy her product are feared by the world at large, more than war, plague or pestilence. So important is she that civilizations yearly plans are governed by what she grows.

God also made our West, He arched her blue skies, built her massive mountains. Those I see about me are as Kingly things as ever came from His hand to prompt mortal's pride or gladden mortal's eyes. So grand and beautiful are they that methinks my fancy sees the great Creator, way back at creation's dawn, spending His first Sabbath, looking down on what He had created, and when His Omnipotent eye rested on this very spot, 'twas then God smiled, 'Twas then God said, "It is good."

For they say your country way up here,
  Is filled with precious gold;
Its mountains rich with silver
  And with countless gems untold.
I can only see your country,
  But my heart with glory fills
With the gold I see when sun sets,
Behind her great gray hills.

With the silver in her brooklets
  That are set with sapphires too,
Watch their flashes in the sunlight
  Of her meadows stealing through.
A country; your own country,
  My own to love and prize.
Some call it "West Carolina,"
  I call it Paradise.

There is a psychology it is said that puts the imprint of what a person does or thinks upon his or her form or face. Hence, "as a man thinketh so is he," and as a man is so he thinketh. It is equally true that environment stamps upon us not only only what we are but where we are from. Have these big mountains given unto you Western men that rugged sturdiness which is yours today and for which you have so long been famed? Do the garnets, amethysts, sapphires and other precious stones, coupled with this fairy land of laurel, rhodendron, ferns and azaleas explain the beauty of Western womanhood that I see before me?

Ladies and gentlemen of Hendersonville, appreciating as we do the great feast that is ours because of your hospitality,—it is needless to say that we are grateful beyond expression. It is said that it is more blessed to give than receive. If this be true, you folks up here are fortunate indeed. You are in position to give so much and you do give it so royally.

As the years take us along, the physicians of North Carolina will look back with pleasure and profit on your beautiful city and your hospitality. And when the sun of our individual lives, begins to Western so far that the shadows twist themselves towards the East; when our hands that have been skilled and ready for the daily task, shall begin to lose their cunning and blunder with the helplessness of age; when life's

twilight begins to fall about us, we will look back in pleasant retrospect to you and your citizens.

We will always remmber you and I verily believe we can better walk the rugged paths of life even into the gathering shadows and meet the great Unseen with greater cheer and deeper happiness for having known your country and you.

The President's Address.

"THE PROFESSION AND THE STATE."

A. A. Kent, M.D., Lenoir.

Fellow Members of the Medical Society of the State of North Carolina, Ladies and Gentlemen:

Before entering upon the discussion of the subject chosen for my discourse today, I wish again to express my deep appreciation of the great honor you, my fellow members, conferred upon me, in making me the President of our State Medical Society. It is, indeed, a signal honor, to be called upon, to preside at this our fifty-ninth annual meeting, over so distinguished a body professional men. It is a greater honor to have been chosen to be the head and director, for a year's time, of an organized body of men, such as this, whose members touch all the people, and hold in their keeping the lives, health and welfare the people of a great State. I trust, that the year of earnest endeavor on my part, has not failed to help keep alive, the interest and enthusiasm of the profession in our organization; and that my efforts to weld a stronger bond of sympathy, and to institute a more active co-operation, between the profession and the people of the State, may result in some good, to both profession and people.

I desire to speak briefly of the proposed revisal of our Constitution and By-Laws, which awaits the action of our organization at this meeting. It is perfectly natural, that opinions should differ, as to the best plan of organization for any society. It is equally natural, and to be expected, that in their zeal for the welfare of the Society, the members should differ, not only radically but energetically, on some points; and such is the case in regard to our constitution and by-laws. As President of our Society, I have discussed freely, with

both sides, these matters of difference; and have reached the conclusion, that all regard the welfare of the Society as of paramount consequence to the success of either side to this controversy, and that it can be best served by compromise of the views. Each should yield something, and yet each may have in our organization that which he most cherishes. The Committee on Revisal will offer, as a substitute for the revised constitution, now pending action, amendments which leave the House of Delegates just as it is now constituted, except, that in place of electing the officers of the Society, it will elect its own presiding officer and Secretary. The election of the officers of the Society will be done in the open Society, nominations to be made by any member of the Society on the floor, and without the aid of a nominating committee. This arrangement should, in my judgment, be acceptable to every member here present. Many members have expressed to me their hearty indorsement and purpose to support it. It is my earnest wish and request, as your presiding officers, that it shall be unanimously adopted in the House of Delegates and in the general meeting. The only change of any material consequence is the giving to the general body, the privilege of electing its own officers.

And now, I invite your attention for a short while to the consideration of my subject, "The Profession and the State."

Every new invention or discovery, that admits of practical application to man's use, brings with it new fields of activity. Often a new discovery opens up a new field of thought, and both operating together in practical utility to man's advantage, project new lines of endeavor, and new and hitherto unrecognized obligations on part of the profession, the State, and the Nation. A few years ago, we knew little or nothing, about disease producing organisms. Their origin, propagation and distribution, were unknown mysteries, wrapped in ignorance and superstition. But, thanks to modern laboratory

research, the germ cause of disease has been revealed, and today, we are able to meet at the threshold, and to fight it in the open. We meet the enemy on his own ground and match his cunning with our skill. In consequence of these recent discoveries, the medical profession, is in a transition period. We are passing from the age, in which the object and end of all medical knowledge, was that of healing the sick, into an era, in which the highest aim and purpose of the profession, is to keep the people well. In this great and growing work, of protecting the health of the public, the profession and the State, must both take an important and active part. The welfare of the people of the State, is firmly bound up in the harmonious co-operation of the profession and the State. The profession must lead the way, as it always has done, in matters of medical character. The profession must be the active instrumentality in the execution of all measures, having for their object, the preservation of the lives and health of the people. The State must take an active part in educating the people, along lines of preventive medicine. It must enact and help to enforce, all needed health laws, looking to the public welfare.

A very large part of our program for this meeting is given to the consideration of how we may better conserve the public health. We have a full and interesting list of subjects under the Section on State Medicine. In it, we have the very great honor and distinction of an address from His Excellency, the Governor of the State. This is the first time, in the history of our Society, that a Governor of the State has honored our meetings, by going out of the city of Raleigh, to be present with us, and take a prominent part in our deliberations. It is the strongest evidence that we could ask, of the awakening of the State, to the importance of our organization, and its work. It is the best of evidence, of the advantage offered at our annual meetings, of an opportunity to arouse the profes-

sion, and the people, more thoroughly, upon the public health movement, that has been inaugurated by the doctors of the State. It is a literal joining of hands, between the organized profession and the State, in common warfare against preventable disease. Through our organized efforts, directed by the Secretary of the State Board of Health, we have done much, in the way of procuring beneficent public health legislation. We have done much toward the enlightenment and direction of public opinion in regard to the great problems of State medicine. With increased forces and renewed energies, and encouraged by a live progressive Governor, we will go forward, conquering and to conquer, waging successful warfare against disease, the great enemy of mankind.

In addition to the Section on State Medicine and the Conjoint Session, both devoted to health work, we have as an adjunct part of our organization, The State Health Officers' Association. It is a worth child of the State Medical Society, having originated with, and been organized by, active members of this Society. Its deliberations on yesterday, required a full day, three full sessions, for consideration. In addition to the atendance at this meeting, of other prominent men of the State, who took conspicuous parts in the program, it was especially honored, by the presence of another one of our most distinguished State officials, Dr. J. Y. Joyner, Superintendent of Public Instruction. His presence on this occasion, is an assurance of a strong alliance, between the medical profession of the State, and the great educational system of the State. We, as an organized profession, have thus joined hands with one of the greatest forces for good in the State. The educational crusade, having for its object, better public health conditions, has thus received a new and tremendous forward impulse.

The profession has always urged upon the State its duty to provide adequately for its unfortunates, such as its blind children, deaf and dumb children, insane and others. The build-

ing of the State institutions for the care of her unfortunates has been brought about, largely by the doctors of the State, who are always first on the scene of misfortune, in whatever phase it may present itself, and whose insistent pleadings for unfortunate humanity can never be hushed, till their righteous cause is heeded. Five out of seven, of these State institutions, have been placed under doctors as superintendents, though this was not imperatively necessary. While they are State institutions, they are quasi medical, hence the medical profession has a larger interest in them. We as a profession, should always bear in mind that they are peculiarly *our* institutions, because we are largely responsible for their existence. When the superintendents are chosen from our profession, it brings added obligation and responsibility, along with remunerative positions.

I raise the question of whether we, as a profession, are doing the most good through these institutions to the people, that it is possible for us to do. I do this, not for the purpose of criticizing, but for the purpose of provoking thought, and suggestion. I have visited these institutions and can testify that they are admirably well kept. The work of providing for the wants of the inmates, and the teaching and training, in those that admit of it, are excellently well done.

It is not enough in this day of preventive medicine, that we should be content with merely providing properly for the care and education of the blind children, that are sent to the school for the blind. It is infinitely better, that we take the proper steps, to prevent children from becoming blind. It is a sad commentary upon the profession and the people of the State, that one-third of the blind children of the State, are unnecessarily blind. They are blind, because their eyes were not properly washed and disinfected, at the time of their birth. I am pleased to state that the Superintendent of our State School for the Blind, is making great efforts to educate the people and

the profession on this point. The very best means that he could fall upon, to reach the profession and the people on this subject, would be for him to prepare a paper on this subject, annually, and come before this body of physicians and read it. Through this organization, he could most effectually reach the profession and the people? The last Legislature made it a misdemeanor for any midwife or doctor, to fail to use the proper means for the preservation of the newly born infants' sight. Although we have this beneficient legislation on our statute books, the profession, the midwives and the people, remain ignorant of it. We must include this in our crusade of education. When the people and the profession understand these things, we will then have fewer children doomed to a life of perpetual darkness.

The profession and the State, are in hearty accord, in the State's work of providing for the education and training of the State's deaf and dumb children. It is being most excellently done, in an institution, well built and equipped, and under the management of a most excellent superintendent. But, so far as I know, no statistics have been furnished to the medical profession, showing what percentage, if any, is due to preventable causes, and calling attention of the profession, and the people, to their duties along these lines. Again, I would recommend the advisability of the superintendent preparing annually a paper on some subject relating to the causes of deafness in children, and presenting it before the Section on State Medicine of this Society.

The three hospitals for the care of the insane of the State, are regarded, more especially, as medical institutions. The State is appropriating large sums of money annually, for the support and further enlargement of these institutions. They are well kept, and the inmates properly cared for. But, so far as I am informed, no research work is being done in any of *these* institutions, with a view to determining the relative fre-

quency of the many causes of insanity, and for the purpose of the dissemination of knowledge, of what may be done to prevent any part of it. Every practitioner of much experience, is aware of the fact, that some of our insanity, could be prevented; and yet, the profession and the State are asleep, so far as any substantial work is being done along this line. We need to be awakened, by the medical men in charge of these institutions. There is no better place for the awakening to begin than in the meetings of the State Medical Society. We occasionally have papers read before our body by members of the profession from these institutions, but they are not as frequent as they might be. The superintendents are falling short of the very best opportunity of serving the State and the people by failing to attend our meetings, and reading before us, practical papers, setting forth, in plain terms what we, as family physicians, may do to protect those with whom we come in contact, against this dread misfortune. If marriage of cousins is a common cause of deafness, blindness, idiocy and insanity, the fact should be so impressed upon the profession and the State, that the people would become educated to the point, where they would abhor it, as they now abhor the marriage of brother and sister. If our modern system of education, especially that of pushing and over taxing the nervous strength of young girls, is developing a race of neurotics and lunatics, the sooner these heads of institutions, and the whole medical prfession, speak out against it, in thunder tones, that must be heeded, the better for the race.

The profession is duly awake to the fact, that tuberculosis is a contagious and infectious disease. We have not been remiss in our efforts to educate the people on this point. We have been so insistent in teaching it that we have induced the State to undertake the laudable work of building and supporting a State Sanitorium, for the treatment of some part of our tuberculous patients. Are we, as a profession, doing our

full duty to that institution? We should bear forcibly in our minds, that it was built because of our earnest representations that the State and the Nation must take part in the crusade against the "great white plague." We must now give it such moral and practical support, as to make it a great force for good in the State. It is only through our efforts, that it can be brought to be properly understood by the people, and so patronized, as to fulfill its mission for good to the people of the State. If it is not doing all the good, that we as a profession promised that it would do, we are failing of our obligation to the State and the people. I ask that you give to it your most loyal support and co-operation. Remember, that it is a gift of the State to suffering humanity as a result of our petition.

One other institution, the School for the Feeble Minded Children, is now being built by the State. The constitution adopted in 1875 provided, that the Legislature should, "as soon as practicable, devise means for the education and care of these unfortunates. This provision of the constitution of the State, had not been complied with, till the Governor and a few doctors of the State, urged it so forcibly upon the last Legislature, that it was induced to comply with this requirement of the constitution.

Feeble minded and idiotic children, intellectually considered, remain children all their lives, and are so spoken of. It is a endition due to arrested development of the mind before birth, or from disease in early childhood. Some of them never attain to a development of mind beyond that of an infant, others may attain to that of a child one or two years of age, while others to that of eight or ten years or more. There are all grades and shades of development among them. Though they are the subjects of the tenderest love and care of their parents, because of their mental deficiency, they are always a source of mortification and shame to the family, and are fre-

quently kept up, or hidden from the sight of the world, like skeletons in a closet. The most helpless of them, must of necessity, sooner or later, become dependent upon the public for support. The higher grades, become paupers, tramps and crimnals, or the subjects of corruption and debauchery, in the community in which they live. They are continually bringing forth a new generation of defectives and dependents. Society can not escape its obligation to these children. The State has recognized its duty to them, and is building an institution for their care and development. It has never taken a more humane step, or made a better business investment, than in providing an institution where the lowest grades of them can be so trained, that they may, at least, lead a harmless, happy and contented life; and that the higher grades, may be educated and trained in youth, for some form of useful work, by which they may employ themselves in productive labor, thus contributing to their own support; and above all, that the endless chain of reproduction of their kind, may be largely stopped. There are some two thousand of these children now in this State. "We must have in every intelligent community in the State a strong public sentiment, that demands, as right, that every American child, however defective, shall be educated and trained, at the public expense, according to his needs and capacity." To the medical profession of the State and the teachers of our schools, we must look for the development of this sentiment. The institution should be so equipped, and manned, that it may do research work of the most scientific kind, looking into the causes of this trouble, and the best methods of protecting society and the State against the further propagation of mental defectives. The knowledge thus obtained, should, from time to time, be brought to the attention of the medical profession, by papers read before this Society. If we simply stop with the care of the unfortunate individuals, who are sheltered in this institution, our efforts

for good, will fall far short of its possibilities. It is a greater work to have prevented the birth of one of these unfortunates, than to have provided shelter for ten of them. The State Medical Society is the instrument through which this work must largely be accomplished. It is an organized body of men, whose members come in touch with all the people of the State. Through them all scientific information of a medical nature, can best reach the people.

While the profession must and will lead, as it always has done, it should ever be borne in mind, that no legislation is justifiable, or should ever be asked for, that has not for its primary and paramount purpose the welfare of the people. No legislation should ever be sought that is for the benefit of the profession alone. Any legislation that would limit the number of doctors and create a monopoly in their hands, is objectionable. The requiring of higher professional qualification on the part of young men entering the profession, has never at any time, reduced the number, or even stopped the continual increase of young men going into the profession. Yet it provides, for the people, young men who are qualified to render better services. It is a mistaken notion on part of the State, to think that the young men of North Carolina, in sufficient numbers, will not attain to any standard of proficiency, that is set for them. I resent the idea, that the young men of the mountain counties, are not able, from any cause, to keep pace with the young men of any other section of the State, and that they need "special limited license" laws, or any kind of lower standard, to meet their requirements. We of the mountain countries are not distressed with poverty; we are not deprived of the opportunity for common school education, high school or college education, for that matter. Our young men are not always supporting widowed mothers as the demagogical argument puts it. On the contrary, we boast of our boundless resources, our enormous productions, our mil-

lions invested in manufacturing, our splendid schools, and our industrious, intelligent, enterprising citizenship. We wear good clothes, ride in steam cars, go to picture shows, even risk our lives in automobiles over bad roads, and can measure up to any standard that is set for us. But, we have in our section, just as there are in other sections, young men who will take a short cut, and easy road, into a profession that they have mistaken for an easy money-making profession, if allowed to do it. But what of the people? As it concerns the profession, or the individual young man, is a matter of small consequence. The real question is, whether a young man, who is admitted not to be qualified to practice for our urban people, should be granted a limited license, allowing him to practice upon our country people. I insist that our country people are as good as the best. They are entitled to the best of everything, especially the best of medical skill. They furnish the best young men out of which the medical profession is made. They pay more for medical services, and should have the best. The State should lose no time in repealing the law that provides for these limited license doctors, often more limited in knowledge of disease and how to treat it, than in territory in which they practice. Until the law is changed, the Board of Examiners, should create as few of them as possible.

It is with pride and pleasure, that I point to the fact, that all the medical schools of this State, require the usual high school course, as a preliminary qualification, before a young man is allowed to enter upon the study of medicine; and that the medical colleges of the State, require the full four years course in medicine, before graduation. It is, at the same time, a source of humiliation to the North Carolina doctors, that our State laws have not kept pace with the colleges and schools of this and other states, and, that we, are lagging so far behind other states, in these respects. The three years course, the standard of our State, is now obsolete, as there are no

colleges, that do not require the full four years course. To change our standard, so as to read four years, would make no difference with any young man, for there are no longer any three years colleges. It will be no more of a hardship, to put upon our statutes the usual preliminary educational qualification; for, the colleges have lead out in this matter, and already require at least a high school course, as a preliminary preparation. To change our State laws in these respects, will work no hardship upon any one, but will restore to the North Carolina doctor his lost prestige in the other states.

Our rapidly advancing civilization demands educated men and women in every sphere of activity. The uneducated, untrained mind can not keep abreast with the progress of the times, in any scientific field of activity. This is pre-eminently true of the life preserving and life saving science of medicine. Our modern civilization demands the trained mind and the skilled hand of the educated doctor. An intelligent, enterprising, progressive citizenship is demanding at the hand of the State, not only common school education, but high school education, college education, university education, agricultural education, and professional education.

The State has recognized the demand upon it for help in the education of the doctors of the State, by erecting and equipping the New State Medical Laboratory building at the State University. This is a fitting token of the State's appreciation of her doctors. It is also a declaration on part of the State of its purpose to lend a helping hand in the education of our future doctors. The doctors of the State should in return, show their appreciation of the State's effort by using their influence to the end that a greater number of young men shall take the first two years of their medical course at this State institution, in place of going out of the State, as so many of them have been doing.

The State has properly recognized the great debt that we owe to laboratory research work, which has revealed to us the true cause of most of our infectious diseases and how we may prevent them. It has provided in the State medical building a number of well equipped private laboratories, where any doctor of the State may go and carry on, for a time, his research work, without the expense of having to build and equip his own loboratory. The best field for discovery and usefulness on part of any young doctor, is in laboratory work. I commend to you these laboratories. Pellagra is today puzzling and vexing the medical profession of the country more than any other one disease. I would suggest that some of our young men take this problem into one of these private laboratories and solve it, bringing with its solution great honor to this Society, and undying fame to himself. Another problem that I would suggest for solution, is the finding of an efficient remedy for hook worm disease, that is not in itself a poison. Who will be the young doctor to find that remedy?

It is our custom, and properly so, to elect delegates to the annual meetings of the Medical Associations in our sister states. There is now, and will be in the future more reason for this custom, than there has been in the past. As our public health work grows, there will be more occasion for an understanding and co-operation with the organized profession of our sister States. A *better* field for practical results, is in sending delegates to other civic organizations in our own State. We need the sympathetic co-operation of the editors of the State, the teachers, and the farmers of the State, all of which have strong organizations in the State. I recommend that we elect one delegate annually to each of the following organizations: The North Carolina Press Association, The North Carolina Teachers' Assembly and The North Carolina Farmers' Union; and that we invite them in turn to send delegates to our annual meetings. This step will bring about a better un-

derstanding and co-operative spirit between us and these several organizations. In choosing our delegates, it should be understood, that it is not a mere empty compliment, that we are paying to several of our members. We should choose men of our best ability, men who are able to make a speech upon occasion, men who will know, what to say, and how to say it. All delegates elected to attend the meetings of other organizations, should be required to make report to the House of Delegates, at our next meeting, so that we may know how well they have discharged their duties.

Great progressive movements, like great reforms, come in waves that sweep over a State, and sometimes over the entire country. We have had our great educational wave, and our great prohibition wave. Of the several great economic questions that now engage the public thought, the one that far outweighs any of the others, is "better public health conditions." The time is not far distant, when we shall have a great public health wave, that will sweep the entire country. The health of the people, will be the paramount thought in the minds of the profession and the people; and will occupy the first place in the affairs of State. The Owen Bill will have become a law; and out of it, will grow a great National Department of Health, with some distinguished doctor as Secretary of Health. The nation will be engaged in building great sanitary institutions, in place of great battelships. It will spend millions in drilling, equipping and maintaining an army to wage war against preventable disease of every kind, in place of war against our fellow men. The physician will not have lost his profession, but will become the skilled health officer. He will be engaged in preventing disease, in place of mitigating and curing it, and will receive a fixed salary from the county, State or Nation, in place of fees from the indicidual. The State will then, have less need for schools for the blind, deaf and dumb, and feeble minded children. There will be

less need for insane hospitals and tuberculosis sanitoriums.

In its very essence, such a work demands co-operation, such as can only be accomplished by organization. It demands great State medical organization, co-operating with every other civic organization. The individual doctor owes the same high duty to his Society that he owes to his country or to humanity. His influence and opportunities as a member of the Society, are multiplied, and greatly exceed those of the individual doctor, who stands aloof. He should not be content, with reading medical journals, doing research work, or gathering up information and experience for himself alone. He must recognize his obligation to the Society, to his fellow physicians, and through them to a vastly enlarged field of humanity. Nor should he be content to be an unknown and unappreciated member. He should so assert himself, as to become an important unit, a constructive human factor, in the present and future work of this great co-operative organization, to which he has given allegiance.

Dr. Way: *Mr. Chairman*: I have listened, as I am sure all of us have, with great interest to the annual address of our President, and I am sure all of us have been instructively entertained and benefitted and impressed with the fact that we have, during the past year, in deed and in truth had a man at the helm of medical affairs in this State who kept both eyes wide open and watchful to the interests of everything that concerned the profession. (Applause).

I move, Mr. Chairman, that this Society extend to its President its hearty thanks for his instructive, exhaustive and most appreciative address, and that it be referred to a committee.

Carried by unanimous vote.

Committee appointed as follows: Chairman, Dr. Way; Doctors W. S. Rankin and A. J. Crowell.

The President: *Gentlemen of the Society*: We will now take up this program and despatch business with promptness, I hope.

"CAUSES AND RESULTS OF CARELESSNESS IN PRESCRIBING."

DR. WM. S. JORDAN, FAYETTEVILLE.

Mr. President, and Fellow Members of This Society:

With the possible exception of surgery nothing offers so much hope, nor gives so great inspiration to the young physician, in his academic years of study, as the acquirement of a knowledge of the drugs of the pharmacopœia, their application to the cure of diseases and the alleviation of suffering. He feels with pride the satisfaction that is to be his portion in the practice of his profession by being able to use drugs and therapeutic measures in such a manner that the results he looks for will be obtained with a uniformity that is well-nigh constant, dependent only on his ability to diagnosticate correctly, excepting only those disease-processes which he is taught are little, if any, influenced by medical treatment.

In the school of experience the young doctor soon finds that to some extent his early ideas of therapeutics are but castles in the air, because he has taken it for granted that the field is one of boundless possibilities, rather than as having its limitations, and this, coupled with the fact that his failures leave more lasting impressions on his mind than do his successes, accounts for his loss of faith in drugs and the birth of the idea that there is little or no virtue in them. The result is that he begins to believe that it makes little difference what one gives so far as the outcome of a spell of sickness is concerned and he becomes, in spite of his training, a faithless prescriber. Being without faith he naturally becomes a careless prescriber. Enlarging on this idea as a basis I have chosen as the topic of this paper, "The Causes and Results of Careless Prescribing."

To intelligently prescribe drugs their physiological effects

and therapeutic uses must be known, and if we have not the determination to employ the materia medica to the real advantage of the patient, and the moral conviction that our aim in treatment of an illness is to relieve or cure the malady, then it were far better that we had never chosen the medical profession as the field for a life's work.

There is enough of the truly scientific in medicine to make the medical profession live until the end of time, but there has long been enough of the utterly unscientific in medicine for the public to feel the effects of methods of practice that heap discredit upon it, and we have nobody to blame but ourselves for its ideas in this respect.

The principal causes of carelessness in prescribing, following loss of faith in drugs, (and it is my contention that there is no excuse for loss of this faith), are lack of knowledge of materia medica; failure to make correct diagnoses; the use of drugs that are not constant in strength and the failure to adapt the dosage to the particular needs of the individual patient until the physiological effects are obtained; the giving of many drugs in a single prescription until it resembles a "conglomeration of a huge ponderonn" with consequent chemical and physiological incompatibility; and last, but not least, laziness and indifference.

It is apparently true that surgery and the specialties have made greater strides in the progress of science than has the general practice of medicine, as such, but it is nevertheless true that great progress is being made in the latter field also, and with a knowledge of the principal branches, anatomy, physiology, materia medica, pathology, chemistry, clinical diagnosis, it is possible, in the light of our knowledge with the methods at hand given us to employ, for us to know positively, in the great majority of instances, whether a particular patient can or cannot be benefitted by treatment.

Therapeutics and preventive medicine come nearer to being

exact and accurate in application now than ever before, specific cures have been discovered for certain diseases, drugs are more potent than formerly because they are being standardized and are of definite strength and these facts can but impress us with the idea that care and great painstaking are absolutely essential to the successful practice of medicine. The present-day doctor, endeavoring to benelt his patients rather than to make money regardless of results, has to work hard and fast to accomplish his purpose. Accuracy in diagnosis, demanding so often recourse to the laboratory for the examination of blood, sputum, feces, stomach-contents, urine; or, to cure certain diseases the giving of antitoxins, vaccines, and serums, which measures require careful technique and skill; or, in the field of preventive medicine, requiring a study of conditions with reference to hygiene, sanitation and sociological problems. These things and many others make it impossible for the physician of the present time to serve the public creditably unless he remains constantly at his post, studying when he isn't working and working when he isn't studying.

This type of man has not lost faith in medicine and the more he learns the better he knows that in so far as the drugs of the materia medica are concerned they have a field for definite application, and his prescriptions are not complicated shot-gun affairs, but rather simple, the therapeutic efficiency being thereby enhanced. It is sometimes right here that carelessness and indifference slip in by our failure to keep in mind the fact that each patient is a law unto himself, subject only to the general laws of practice, and if he should have idiosyncrasies and peculiarities that forbid the use of certain measures others of equal efficiency may, in most instances, be found to take their place.

One of the most striking illustrations of the great amount of careless prescribing that is so generally practiced by the pro-

fession is the wholesale use of proprietary preparations. As regards this state of affairs it is my opinion that the physician who allows himself to be used as the tool of the manufacturing drug-houses in dispensing their ready-made preparations is guilty of one of two things, or both. Either he is lazy or he is ignorant. In being ignorant he doesn't diagnose his cases properly, he doesn't know what to prescribe if perchance he does recognize the nature of an illness, and consequently he gives a shot-gun that is ready-made, one which he knows will do no harm in a given dosage if it does no good. The compounders of these preparations know but little if anything of disease and the therapeutic uses of drugs and their combinations for the relief of suffering and the cure of disease and yet, by our use of these scores and scores of proprietary remedies, we place ourselves in the attitude of being taught materia medica by their originators and are advised as to the manner in which to practice medicine. Is it not enough to make a doctor feel ashamed of himself to have the sampling-agent of a drug concern to come into his office, a man who is not even a doctor and who knows nothing of medicine, except what his employer has taught him to say before he leaves the home-office, to detail at length as to the virtues of his compounds as to palatability, compatibility, physiological effects, and therapeutic uses? I say it is disgusting, but we are to blame for it because we are the very life of the trade. The other day a dispensing agent came into my office, placed a sample bottle of medicine on the desk in front of me and dealt at some length as to its many virtues. By questioning him I learned that the only possible excuse for the existence of the mixture at all was that it put quinine up in a palatable form. Then he told me that quinine put up in that mixture in that way would turn me out results that I couldn't obtain with quinine in any other way. The pitiful part of that story is that he really expected the doctors to believe him and in

that way be induced to specify his preparation on their prescriptions. Isn't it shameful to think of the manner in which we allow ourselves to be duped by these slick-tongued artists of the road? Where is our pride in this respect? What difference does it make if a proprietary compound is advertised to the profession only, when the medical profession bears identically the same relation to the manufacturing chemists that the laity bears to the patent-medicine houses? That being the case, and it is true, why should we blame the layman who is without any knowledge at all of the merits of different kinds of practice for seeking advice from the osteopath, the Christian Scientist, faith cures, or cult of whatever kind, when we are not even honest with him ourselves? In this question I have given the greatest instance of careless prescribing and at the same time suggested the most fruitful result. More than that, I am afraid that it is too often actually true that the osteopath is really as honest in the methods he employs at times as some of the members of the regular profession who would delegate to themselves extraordinary ability in the practice of medicine. Can we blame the public for doubting us, or wonder that the sick and suffering in their desire to find relief fall into the hands of the irregular practitioner? Our patients demand honesty of us, and for the man who is not willing to survive or perish by honest methods I want to say that he ought to be labelled as a quack and put in their ranks where he belongs.

Medicine is defined as the art or science of healing disease, but medicine in teaching us what it can do also shows us its limitations, or what can't be done. Governed by experience and practice and judgment we are enabled to employ the use of remedial agents in a rational manner for the relief of suffering and the cure of disease. Compare this practice with that of the man who goes stumbling along in utter ignorance of the agents he is employing, except that they are

said to give splendid results, and under the cloak of the greatest profession on earth he is employing methods that would do credit to the worst sort of quack.

Brothers of the medical profession, we all feel pride for the respect in which we are held by the laity, and we feel gratified that the influence of the doctors in a community is unsurpassed by that of any other body of men Let's not relinquish our opportunity and right to be so considered by our people and those whom we would serve by permitting apathy and indifference to have a part in the work we would do. Diligence and painstaking are the watch-words and by making each patient a study and treating him according to his own peculiar needs we may hope to gain his confidence, thus demonstrating our ability to treat disease, thereby centering everlastingly in the medical profession the right to be characterized as the custodians of the health of a people.

The present is an era in medicine when accuracy in diagnosis and treatment is demanded and the emphasis is just as strongly stressed regarding the treatment as the diagnosis, because the results are desired just as earnestly as the knowledge of what troubles a patient. If we would keep this fact in mind there would be no cause for the writing of a single indifferent prescription.

Cults of all sorts have been born, have flourished for a time and perished, but as stated just now, there is enough of the truly scientific in our work for the medical profession to live forever, and it is the duty and privilege of those of us who are regularly qualified to so use our talents that glory and power will redound to its credit, and more strongly establish it in the hearts and minds of all people, more especially now, at a time when it is most needed.

"Causes and Results of Carelessness in Prescribing." Dr. Wm. S. Jordan, Fayetteville.

Dr. G. T. Sikes: I just want to say a word of thanks to Dr. Jordan for that paper. We were not so quiet as to make it as easy to hear as we might have been, but I appreciate what he says. I think his advice is good. His suggestions are proper. I think it is a duty we owe ourselves and our institutions that we first inform ourselves in such a manner that we may be in a position to prescribe properly, and when we have done that we could not do less than to use our best judgment in our profession.

I want to thank Dr. Jordan for his suggestions. There is nothing that adds more to the standing of a physician, as well as any other man, than to be strictly honest and conscientious in his undertakings. The doctor who undertakes to practice medicine without first having learned this duty, is doing a great injustice to the people and to the country in which he practices. I would be glad to see this written in the minds and the hearts of the young men of this profession.

Dr. Jordan closes: I want to thank the Doctor for his remarks.

SOME OBSERVATIONS UPON THE TREATMENT OF SYPHILIS.

C. O. Abernethy, B.S., M.D., Raleigh.

The method employed in the treatment of syphilis should be selected according to the indications. No method should be condemned until it has been given a thorough trial, nor should one be too quick to accept the recommendation of the enthusiast.

There are several different methods with which the most of us are familiar, which can be obtained by reference to the various text books on the subject. For instance, mercury by the mouth, by injection, or inunction; and in combination with the iodides. Salvarsan, subcutaneously, intramuscularly, or intravenously; and in combination with mercury and the iodides.

Mercury and the Iodides.

We are all familiar with the fact that mercury and the iodides will cure Syphilis because thousands of cases have been cured by them and remained cured. The method of their administration is a matter of selection. However, there have been cases which have not been materially benefitted by the use of these agents, the symptoms growing worse under the most vigorous medication. Whether this is due to the method of administration I am not prepared to say. In these cases therefore, some other method or drug must be employed.

Salvarsan.

The results from the use of salvarsan have been very disappointing in the hands of those who thought they had a drug with which all cases of Syphilis could be cured by a single injection. It is very generally agreed that such is not the case; that many cases require several repeated injections and other medication also. On the other hand salvarsan has a place in

medicine which, so far as our present knowledge goes, cannot be taken by any other drug. The results obtained by its administration early in the disease and in late manifestations where mercury and the iodides have failed are very gratifying. Probably the greatest value is in the so-called abortive treatment, where, after its administration, the secondary symptoms never appear, or, if present, clear up at once.

The method of administration seems to be one of individual preference Personally, I prefer the intraveneous injection. The method employed is to cut down on the vein and insert a cannula. I like this best because it appears to be easier than some of the other methods, and can be done more quickly and I think with less danger to the patient.

Care should be exercised in the selection of the dosage; in the preparation and administration of the drug; and it should be administered only to selected cases. Probably some of the deaths and untoward effects due to its administration could have been prevented by observing the above precautions.

A case illustrating a so-called contra-indication:

A well developed man thirty-five years of age had a typical chancre and the secondaries. When we saw him he was sufering with intense headaches, with only temporary relief. Examination of the urine showed a typical picture of acute nephritis—scanty, high colored urine. Sp. gr. 1030, loaded with albumen and many blood and epithelial casts. Diagnosis of acute nephritis, probably syphilitic, and uremia. Administered 0.5 grm. salvarsan, intravenously and instituted treatment for uremic symptoms. Patient began to improve rapidly and left the hospital two weeks later with urine practically free from albumen and casts. Was given bichloride of mercury, gr. 1-25, every four hours. Eight weeks later urine was normal. Wasserman reaction still positive. A second injection of 0.5 grm. salvarsan was given and the mercury continued. Another Wasserman will be made in a few weeks.

This case shows conclusively that one injection of salvarsan does not always cure, and that the cause of nephritis must be determined before it becomes a contra-indication.

The Wasserman Reaction.

I believe the Wasserman reaction is a very important adjunct in the treatment of Syphilis. First, it gives one definite information as to the nature of the disease; second, it indicates whether the treatment is producing any effect on the blood; third, it gives definite information when the patient is completely cured. The method employed is to have a Wasserman for the diagnosis, then from time to time as the treatment progresses, and finally after all treatment has been discontinued.

Conclusions.

(1). The best treatment of Syphilis is the mixed treatment and a careful selection of the proper drug must be made for each individual case.

(2). Mercury and salvarsan are both very important drugs in the treatment of Syphilis.

(3). While salvarsan has not proven what Prof. Erhlich expected, yet it occupies a place in the treatment of Syphilis that cannot be supplanted by any other drug in our present knowledge.

(4). The most satisfactory results are obtained by the intravenous injection of salvarsan repeated if necessary, and in combination with other drugs.

(5). Many of the untoward effects are due to faulty technique in the preparation and administration of the drug.

(6). The liberal use of the Wasserman reaction should regulate the treatment of Syphilis.

"Some Observations on the Treatment of Syphilis." Dr. C. O. Abernethy, Raleigh.

Dr. L. N. Glenn, Gastonia: I have recently used the Salvarsan and I think I have had remarkably good results, the intra-

venous injection being the only method employed. One little point that I hear criticised by physicians is that using it intra-venously it produces abscess. I think the only fault there is that it *is not* intra-venous. If the vein is properly exposed, and the needle is inserted into the *cavity* of the vein, there is absolutely no trouble from it whatever.

One trouble is directing the needle into the vein. There is a strong probability of puncturing the opposite side of the vein; going entirely through both walls of it and unloading the Salvarsan beyond the vein. In that case you will get considerable pain and likely an abscess. But if you are careful to get it within the lumen of the vein, and there only, and deliver the Salvarsan in that place, you will have good results.

Dr. A. J. Crowell, Charlotte: The question of syphilis is one that has worried the minds of medical men for ages, and until six or eight years ago we knew but very little about the disease. When Hoffman and Chandema discovered the spirochæte pallada, a great step forward was made in the treatment of syphilis. First, in the diagnosis, and then in the treatment. At the time of the discovery of this germ, we all predicted that it would not be long until there would be some antitoxin or specific therapy discovered for the treatment of this disease. This prophecy has, in a great measure, been fulfilled in the discovery of salvarsan, or 606. It was found by Ehrich that certain bacteria had great affinity for certain drugs, and working along this line, following up this theory or idea, he went to work and found that the germ or spirochaete pallada had great affinity for 606, and that this preparation would destroy the germ.

I make mention of this fact because of the discussion that is going on today as to the treatment of Syphilis.

A great many men advocate the administration of mercury and iodide of potash along with 606. Why this is necessary I have never yet been able to ascertain. If this remedy sterilizes

or destroys the germ in the system, why is it necessary to give mercury following the administration of this drug? We know absolutely that it does destroy, very rapidly, the germ. I have seen them disappear from the local sores by dark field illumination almost immediately, entirely disappearing in two or three days' time; and if you will examine the serum obtained from the local sores, following the administration of the drug, you can hardly keep from being convinced that it will destroy these germs. You can see thousands of these germs under the dark field illuminator—administer the drug and in a few days the germ will disappear.

This looks as though it destroys the spirochaeta and if it does, why load a man's stomach with mercury, when we know, in a very large per cent. of the cases, mercury will not cure syphilis? At the American Medical Association in Atlantic City a week or so ago, this question came up. Some one had investigated and found that about 50 per cent. of the cases treated thoroughly by mercury were still syphilitic. In other words, the Wasserman reaction was positive after thorough syphilitic treatment, and they had syphilitic manifestations now and then. This has been our experience. In a great number of cases we have treated and followed same with the Wasserman reaction,—and cases that had been treated by competent men—the most competent in the country—and we found about 50 per cent. of the cases thus treated, the blood remained positive and some had active manifestations of syphilis. Therefore, mercury is a failure, admittedly, in the treatment of syphilis.

The doctor spoke of some cases that would not be controlled by mercury. I have never seen a case that was not controlled by 606,—not always with one dose. I have given as many as eight doses, but have given that many in only one case. That was to a patient in which mercury had utterly and completely failed.

The father of this patient, a very wealthy man, had spent thousands of dollars, as he expressed it, trying to cure this boy. He came to me with dead bone in the nose, which was so offensive that I rushed him from my front office into a back room, so that the odor would not be so unpleasant to the other patients in the room.

There were ulcers over the face, legs, and in fact nearly all over his body, nose having ulcerated through between the eyes. The local ulcers should be treated with bichloride of mercury at the time Salvarsan is given intra-venously. In this case 606 was repeated until all the dead bone was removed from the nose. In this way reinfection was prevented, since the drug could not circulate through this bone to destroy the spirochaeta pallada This was kept up for twelve months, and finally the blood and luetin reactions became and remained negative It is our custom to employ both the Wasserman and luetin reactions as a check.

I report this case because the doctor recommended the administration of only one dose. I *always* give two doses. If two doses are not sufficient to cure, then allow the patient to go ahead and the blood will become positive again, and give him other treatment.

Mercury fails in 50 per cent. and about 10 per cent. of our cases have become positive after giving two doses of the Salvarsan. If the blood will become positive in from three to five weeks after the appearance of the initial sore, in six or twelve months after the administration of 606 the blood ought to again become positive, if all the germs are not destroyed, since they certainly would multiply in that length of time sufficiently to produce this reaction in the blood.

"Some Observations on the Treatment of Syphilis," Dr. J. T. J. Burrus, High Point.

In connection with Salvarsan: In the year 1910 I had an opportunity of observing the early use of Salvarsan, and also

an opportunity of observing syphilitic subjects that were treated with mercury and iodide.

We took a series of ten cases of the papulo syphilis, in which we administered salvarsan intra-venously. This was in July and August, 1910, before this drug was put upon the market, and at the same time we administered the mercury by inunction, mercury by injection and mercury per orum, in a series of ten cases each.

As to the Salvarsan, after its administration we observed the spirochaete under the dark stage, and we noticed the first twenty-four hours that the spirochaete seemed to be in a very great upheaval. At the expiration of thirty-six hours they began to disappear. At the expiration of seventy-two hours you could not observe spirochaete anywhere and these lesions very rapidly disappeared, while, with the cases being treated with mercury, it was from two to eight weeks longer in disappearing than those cases treated with Salvarsan, even at that time, and being treated in a method that was very imperfect,—the subcutaneous method.

Now, later, the administration of Salvarsan was employed in no other way than intra-venously. And right here is a point that I think might be well taken: be sure that you get this agent in the vein itself. I know of many instances in which I have seen results and trouble arise from Salvarsan was because it didn't get into the circulation.

After observing these several series of cases under mercury and along with them the use of the Salvarsan, all of which cases were subjected to the Wasserman and the Nagouchey test, the cases we had used mercury with we still gave a negative or a positive Wasserman reaction. The cases in which we used the Salvarsan, and especially when used intra-venously, it gave a negative reaction. Consequently it was proven conclusively that Salvarsan in this clinic was the

agent to use, and was the agents used exclusively for syphilis, mercury and iodides being discarded.

Consequently, in syphilis I believe that two are three injections are necessary to bring about a cure. Whereas, in the tertiary form of syphilis, we cannot stop with two, three, four, or even five injections, if we hope to get results. The lesions are too great and the system has become so engulfed with this agent of syphilis, that they seem to regenerate and feed up again. Now, in my own practice, the cases of syphilis that I have handled I have not used less than three injections on any case.

While on the two series it has been very hard to draw a conclusion as to the outcome of these cases, we are reasoning from this that the salvarsan being an arsenic salt and being also of arsenic salts,—repeating it every week for the first 4 or 5 weeks following the injection of salvarsan, and after that giving it every month, in a few months I have observed no bad results from the administration of it, and I believe it an agent well worth our time to consider.

"Some Observations on the Treatment of Syphilis," Dr. —

In reference to this Wasserman reaction, I would like to ask Dr. Abernethy if the reaction is not present in other diseases besides syphilis. Whether he considers it an invariable criterion as to the presence or the absence of the disease?

Dr. Abernethy closes: *Mr. President*: In regard to the abscess proposition: That is why I cut down on the vein and open it; then you know you are in it, and you cannot get through the vein with a cannulla.

Why do I use mercury? Dr. Crowell admitted that 50 per cent. of the cases treated with mercury were cured. Now, if you do not stick to the mouth, nor to injections, nor any single method, and select your cases, you will find 50 per cent. of cases cured by mercury alone.

I am with you in that salvarsan is the best treatment for

syphilis. I am certain one dose does not always cure. The number of doses should be regulated by the Wasserman reaction, and until that remains negative—six months, a year, two years, indefinitely—your patient is not cured.

I believe it is best to use both mercury and Salvarsan. I believe we get better results by using both. I believe that Salvarsan acts better after you have given mercury. I cannot prove that. It is just my individual belief.

As to the Wasserman reaction: I am not an expert on the Wasserman. My authority is Dr. Jno. A. Kolmer, Professor of Bacteriology at the Polyclinic Medical School, Philadelphia. He says a Wasserman reaction is absolute indication of the presence or the absence of syphilis.

"Some Observations on the Treatment of Syphilis," Dr. S. B. Woody.

If syphilis is a curse to humanity, why not ask proper legislation in North Carolina to stop it? I just ask this question. If it is a curse to the country, why not ask that it be made a felon for any man or any woman who would go down and ruin homes,—ruin our posterity—and everybody else (and possibly this is the seat of tuberculosis and other low-down diseases). If it is worth our while as physicians of North Carolina, why not ask the Legislature of North Carolina to go down and get after a class of people like this? It is ruining posterity, our public schools and everything else. It is low-down; it is disgraceful; and we can ask our legislators to so legislate that people who have it are guilty of a felony.

MR. JOHN E. RAY, SUPERINTENDENT BLIND INSTITUTE, RALEIGH.

Mr. President and Gentlemen:

I deem it unnecessary that I should say very much this morning.

First permit me to felicitate myself upon this occasion and to express my hearty appreciation of the kindness and the courtesies which have been conferred upon me since coming here. I came to the meeting yesterday with fear and trembling, in a way, because I thought, possibly, the meeting would be held behind closed doors. I learned yesterday, however, that I would be welcome to the sessions this morning, and, therefore, I am here.

I came from Raleigh to attend, for the first time, a meeting of the medical authorities of the State.

I am profoundly grateful for the courtesies extended me as the servant of one of our State institutions. I learned from your health officers' meeting yesterday and the President's address this morning, that a further discussion on the measures preventing blindness would not be out of place this morning.

I, therefore, appear to just suggest, as I did last night, that I would be glad to enlist your interest and sympathy in the work of the education of the blind. I deem it really unnecessary to do this, since what I have heard this morning I have been asked two or three questions, however, and, Mr. Chairman, may I say, by way of a personal explanation, that out of thirty-seven years of my public life, thirty-five of them have been given to the education of the deaf and the blind and if you were an audience this morning of deaf persons, I could regale myself, and possibly you, more entertainingly with my hands than with my tongue. On one occasion I was called upon to sing a song as the deaf people sing it, with

my hands, and an old friend said to me afterwards, "John, I believe you can talk better with your hands than with your mouth."

A question asked me by Dr. Hays a while ago was, what was the principal cause of hereditary blindness, I had to show my ignorance. I do not know; but after years of study I have come to the conclusion that there is not much hereditary blindness. There is serious danger of hereditary blindness on the part of the offspring of those who are themselves congenitally blind, and so I remarked last night that I thought the Legislature of our State should pass a law prohibiting the intermarriage of congenitally blind persons, or any blind persons, for that matter. I regard it a calamity to both for a blind man to marry a blind woman; and yet, year by year I find blind men and blind women marrying in different parts of North Carolina. There are no methods which we could adopt to prevent a thing of that sort. I attended the alumni association of our institution last week. There in that group of fifty or sixty people, were here and there blind couples. Bad enough for one blind person to marry; infinitely worse for two blind persons to marry each other.

Another cause of blindness is the intermarriage of relations. I was surprised, some time ago, when I looked over the records of our school, (I will be glad to send a copy to any member of this Association, at any time), to find that one-tenth of the students were the offspring of cousins.

The address of your President this morning referred to another phase of this question—the feeble-minded offspring of cousins.

For the last sixteen years, since I have been back in the State, after having served two other states in the same capacity I am serving now our own, for sixteen years, I have pleaded with the Governor of the State and with the Legis-

lature, for the establishment of a school for wayward youths, and for the feeble-minded children.

I believe it would be a good thing if our General Assembly would pass a law prohibiting the intermarriage of cousins, even to the second degree. Your Chairman stood squarely in the last General Assembly in reference to a bill pertaining to this very subject that I am speaking about. I believe it is next to criminal for us to permit a condition of affairs whose outcome will be the production of feeble-mindedness, blindness, deafness, and other defects; and, by the way, one of the principal sources of congenitally deaf children is the marriage of cousins. It is a very serious problem.

I want, in just a word or two, to substantiate a statement which I made last night. I said that blind persons could be taught to become self-supporting. If the occasion would permit, and your time and your patience would allow, I could give you a number of names of persons, some of whom live in your own communites, who would justify the statement which I made: 85 per cent. of the graduates of our school—men and women—are making an honest living in North Carolina; and when you consider the fact that our purpose in the education of the blind is to take those who would naturally and necessarily be dependents in all after life, and convert them into producing citizenship, you can see something of the importance of the work to which I have given my heart and my life these last thirty-five years.

This claim for the blind was, up to twenty-five years ago, regarded as ridiculous. I remember hearing a leading educator of the blind say that any man who said that a blind man or woman could be taught to make a living with their hands, was a fool. That man has passed away, and that sentiment in the teaching and instruction of the blind has largely passed away, and blind men and blind women can make an honest living for themselves and are doing so.

If you will pay a visit to Brevard, you will find four of our students up there making music at the Hotel Ethelwold, making $20 a month and board and all expenses, for the Summer. A Summer outing for them, and yet they are making a living during their vacation time.

If you will go with me to Caldwell County—there was a most successful teacher—Sidney Heffner—the Professor of Mathematics in one of the high schools of Caldwell County. I was informed by one of his old pupils that he got the first conception of mathematics from Sidney Heffner; and he was blind. A blind man teaching seeing children. One of the most useful citizens of Pamlico County was Jimmie Cohoon. He married, reared a family of handsome children. Two or three have attended the schools of Raleigh and conducted themselves so admirably as to win the admiration of almost everybody in connection with the schools. This man was for years a member of the Board of Education for his County, and one of the County Commissioners for quite a while.

I take pleasure in referring to a young man who came to our school from Union County, who went out from us some four or five years ago totally blind. He, unfortunately, married a young blind woman. This man was elected to the staff of teachers in his native County. He made $65 a month, teaching in the country. Shortly afterwards he was elected Principal of the High School in Union County and is succeeding admirably.

I feel that a case of this kind repays all of the output that North Carolina, as a State, or I, as an individual, have ever expended upon the education of the blind, when I realize that a man has been produced out of a helpless wight in boyhood.

May I say that graduation in our school means a good deal? I notice that the Medical Society requires an applicant for license to carry no higher degree of standing than

the North Carolina high school course. The course of study in our school is a good deal higher.

There is a blind girl teaching school in her native County among the hills, in Haywood County, almost entirely blind,—a successful teacher. Then, Ed White, a freckled-faced, uncouth, unpromising boy, came to our school some twenty-five or thirty years ago, took the literary course successfully, and turned his attention to music, and today he is the musical director in a college for young women in Alabama, with four or five seeing teachers under him.

If you have any questions to ask as to any of these, I can verify any statement I am making in regard to these matters.

From Sampson County yesterday the State Health Officers elected Dr. Cooper as a member of your organization. There is not a better teacher in Sampson County than Ralph Fisher, —a blind man teaching in Salem Academy, with seeing teachers under him.

I have the honor of being a member of the Board of Trustees of Meredith College, Raleigh. Many of Fisher's students come to that college and they stand among the highest there. I simply wanted to substantiate a statement made last night, that blind men and behind women can and do make a living. I told you of a young man who was utterly enraged because he found a blind beggar upon the streets of Charlotte, he himself being a blind man. It enrages a blind man to see a blind beggar. He feels it is a reflection on his class.

I said a moment ago something about the importance of money which has been expended in the prosecution of the work of our school. I told you last night that a distinguished visitor from Nova Scotia paid us an extremely high compliment some time ago, saying that for the amount of money which North Carolina spends, she has the best school for the blind of any in America; but we have been financially handicapped for many years. We have no room for breathing, for

fresh air, for exercise or anything of that sort. They need these things more than any class of children in our State. We are very much in need of facilities of this kind, and if you can say a good word to your representatives in our behalf, who shall come down to Raleigh, for the help of our school, it would be much appreciated. I appeal to you for your interest.

On one occasion they tell us that Horace Mann, the great Philanthorpist of Boston, was at dinner party and was called upon for a speech. It was in the interest of one of the eleemosynary institutions of the State of Massachusetts, and he made the remark, if only one boy had been saved by this School for Wayward Youth, all the money that has ever been spent in its management would have been well spent. Afterwards he was taken to task by some one, who asked if he did not think his expression extravagant,—that if all the money ever spent in the maintenance of this institution had saved one wayward boy, etc., and he replied: "No, not if he was my boy."

Gentlemen, you have no blind children. I have no blind children, thank God, but your neighbors have; and so I am here today, through the courtesy of this body, to plead for those who would be waifs and dependents all their days, that we may make of them self-respecting, self-supporting citizens of our commonwealth. I thank you.

Dr. J. P. Munroe: I desire to thank the gentleman for his excellent remarks.

ACUTE RHEUMATIC FEVER WITH ENDOCARDIAL COMPLICATION.

Dr. Wm. F. Mitchell, Shelby.

If apology were necessary for presenting such an old subject to this body, my reply would be that with all our vaunted knowledge we do not begin to know all about our most common diseases, and were we to cease the further discussion of them it might be considered as evidence that either the last word had been said, or that we were satisfied with our present knowledge of them. Again there are few, if any, acute diseases whose complications and consequences are fraught with more danger to the future of the patient than that of acute rheumatic fever, hence it must retain more or less interest to the student of medicine. Indeed some writers class it as next in importance to tuberculosis among the diseases of early life. It is not my purpose to give a text-book description of this disease and its complication, but to briefly call attention to some points that have impressed me as being important in their diagnosis and treatment. Neither is it my purpose to discuss its etiology further than to say that it is supposed to be an acute infectious, and non-contagious disease due to a specific organism which has not as yet been certainly isolated. Much time and labor has been expended in seeking its cause, but the bacteriology of the disease is still under discussion, and there is no way of making a diagnosis aside from the clinical symptoms. The weight of opinion at present among investigators is that it is a streptococic infection, the tonsils being the portal of entry. As the disease prevails more extensively during the winter months cold and exposure must be considered as etiological factors in so far as they lower body vitality. Excessive acidity which is always present is now looked upon rather as a result than a causative factor.

Although an endemic disease it seems to be more prevalent in some years than in others, for my attention has been directed to it from the fact that a greater number of cases have come under my observation within the past two years than at any similar period. Young adult life is the age at which acute rheumatism is more prevalent, but it is by no means an infrequent disease in children above ten years of age. As to the diagnosis of acute rheumatic fever it would at first seem that this ought not to be difficult, but as a matter of fact there has been and is still more confusion and lack of diagnostic precision in affections of the joints than perhaps in any other class of diseases. This is largely due to the error, in which the profession has fallen of diagnosticating all forms of joint trouble as rheumatism, and a failure to differentiate between true rheumatism and the various forms of arthritis that either accompany or follow tuberculosis, gonnorrhoea, and scarlet fever. The chief diagnostic feature of acute rheumatism is its polyarticular characteristics. This tendency to wander from one joint to another is so very characteristic, that any disease affecting one joint alone is strong presumptive evidence against it being rheumatism. I cannot now recall ever having seen a case affecting only one joint that proved to be genuine rheumatism. I dare say, however, that many of us have seen such cases treated heroically with anti-rheumatic remedies, only to find at last that there was some form of arthritis other than that which accompanies rheumatism. This has been I am sure a common error in diagnosis and ought especially to be avoided as it subjects the patient unnecessarily to harsh treatment without any possible benefit of his condition. In no disease is the saying more true that "he who diagnosticates well will cure well."

Notwithstanding the frequent therapeutic failures in the treatment of acute rheumatic fever I am still of the opinion that we have a well nigh specific in the salicylates. Their ef-

fect upon the course of the disease is sometimes most striking and can be much likened to that of quinine upon malaria. There are doubtless some cases in which this specific action is not gotten but they are the exceptions. In my own cases the benign influence of the salicylates when employed early and in large doses have been marked and satisfactory. It is quite certain "they will not disinfect the pus of a scarlatinal joint. They will not immobilize and clear out a tuberculous joint. They may stop the pain of gout, but we cannot expect their full, rapid, and beneficial action except in cases of genuine rheumatism." There is some difference of opinion among physicians as to the best method of administering the salicylates. I am however an advocate of large and frequently repeated doses until the patient is brought under the influence of the drug, for in administering small doses a tolerance for the drug may be acquired and in thus prolonging the disease we increase the tendency to cardiac complications. The toxic symptoms from the salicylates about which some physicians complain, I have been fortunate in not experiencing. The alkalis are thought to exert, a beneficial influence upon the course of the disease by preventing a plastic condition of the blood which is always present in acute rheumatism, and thereby lessening the tendency to cardiac involvement. I am sure that they do good in diminishing the excessive acidity and it is my habit to exhibit them along with the salicylates.

This brings me to what I consider the most important part of this subject, the endocardial complication. Indeed I might say the chief object I have in view in presenting this paper is to call attention to this grave and far-reaching complication. Endocarditis is such a frequent accompaniment of acute rheumatism that it might rather be called a symptom than a complication. It occurs with greater frequency in the young than in adults, the per cent. of involvement being variously estimated by different writers. In my own cases it has been

met with in more than fifty per cent. of all cases. So far as I know there is no absolute way of telling when this complication has taken place aside from a physical examination of the heart. There may be an acceleration of the pulse, and a rise of temperature which might direct our attention to the heart but as often as not they are absent. These patients do not suffer from dyspnoea and usually there is an entire absence of all symptoms referable to the heart. The left side of the heart is most frequently effected and physical examination reveals a loud systolic murmur over the mitral area. It should be the invariable rule of the physician to make repeated examinations of the heart in the course of all rheumatic affections for the prognosis of endocarditis depends more or less upon its early recognition. Too often this complication is not discovered until the articular symptoms have subsided and the patient is up going around. So much damage may have been done by this time that the patient is often incapacitated through life. The gravity of the cardiac involvement does not necessarily depend upon the severity of the joint trouble, for I have observed well marked endocarditis when the articular symptoms were so mild as to give the patient little or no trouble at all.

It should be the chief aim of the physician to prevent this complication of acute rheumatism, and while it is true that we have no direct preventive for endocarditis I believe if we would promptly put our rheumatic patients to bed and keep them there until all articular symptoms have disappeared and at the same time bring them under the influence of the salicylates the severity and frequency of this complication would be greatly diminished. It is not thought that the salicylates have any protective influence upon the endocardium, but by shortening the attack they lessen the tendency of endocartis. When the endocardium has once become affected nothing is so important in the treatment as absolute rest in bed. This can-

not be emphasized too strongly, for the average patient does not realize the gravity of the heart lesion and looks upon it as entirely unnecessary to be confined to the bed after the articular symptoms have subsided. As to how long these patients should be kept in bed would depend upon the extent of the damage to the Endocardium and whether or not the valves were affected. In ordinary cases without valvular or myocardial involvement they should not be allowed to get up for some time after the fever has subsided, and the pulse has resumed something like the normal in frequency and strength. To permit them to get up earlier than this is to allow them to take their life in their own hands. Aside from the above treatment there is little else to be done for these cases. Aconite should be cautiously given to reduce rapid heart action. Digitalis is contra-indicated unless there is distinct cardiac weakness. Endocarditis may terminate in one of several different ways. Complete recovery is possible but this must be quite rare. While preparing this article I had occasion to examine several patients who had been under my care within the past three years and in every instance the endocardial murmur was still present. Most often the acute symptoms are followed by a subacute or chronic condition of the endocardium which may remain for months or years, but sooner or later terminates in valvular disease. Patients suffering with chronic endocarditis may go for quite a while without suffering any special discomfort but are incapacitated for any hard are strenuous work. In some cases where the myocardium seems to be affected the results are more immediate. Such a case recently came under my observation. And on account of the myocardial complication compensatory hypertrophy failed to take place, the heart rapidly dilated with a fatal result in a few months.

In closing I wish to call attention to the prevalence of organic heart disease and also to the fact that they are decidedly

on the increase. In a comparative table, recently compiled by the Equitable Life Insurance Company showing the mortality per hundred thousand of our most common diseases, in twelve of our largest cities, those from organic heart disease were only exceeded by that of tuberculosis. Inasmuch as the majority of all organic heart affections are the sequel of some infectious disease the time is coming when they will be classed among our preventable diseases. I am persuaded that if we were more accurate and painstaking in the diagnosis and treatment of acute rheumatic fever we would go a long way in preventing endocarditis which is such a fruitful cause of chronic vavular disease of the heart.

Dr. I. W. Faison, Charlotte: *Members of the Medical Profession*: This is a paper that is well worth your study.

It is, in my way of thinking, not a common disease. In fact, I look upon it especially, in my part of the country—in God's country—a very rare climate indeed—we seldom see acute articular rheumatism or rheumatic fever with the symptoms marked enough to make a diagnosis of true rheumatic fever.

In the line of children I want to say to you—as that is the line in which I live, and move, and have my being—that it is oftener there than one would suspect; that it often shows itself in children, as the paper says, in which there is no symptom until the heart shows a valvular endocarditis.

The only symptoms these children show are those which the mothers and nurses call "growing pains."

When you have children crying with leg-ache, put your stethoscope over the chest and see what you hear. Dr. Rotch in Boston, one of the best specialists in children's diseases, says it is a very frequent disease there, including many kinds of endocarditis.

We do not have the ice, the cold and the dampness, the raw

winds and the weather that they have there. They have it in abundance. We have endocarditis here, too, but, gentlemen, all of the heart disease that he speaks of does not come from rheumatism. When men drink too much mean liquor and eat too much it is enough to give them conditions of the heart that are wrong. Now, rheumatic fever does do these things, but it does it in a little different way than the way the paper says; and when he speaks of the plastic condition of the blood, I do not really understand what he means by that; but when I study it out myself and find the pathologic condition produced on the valves of the heart through the blood infection, from the result of which you have a disabled valve,—a valve which is never going to get well. But, as the paper has said, these symptoms do get well. But, gentlemen, I am here to tell you that they get well in spite of the medical profession of this country, because the medical profession has not thoroughly fixed in its mind the value of the causes of endocarditis.

"How long," he says, "shall a child lie in bed that has endocarditis?" My idea is a baby that has rheumatic fever, that shows a murmur at the mitral orifice, shall stay in bed one month in the recumbent position. I keep him in bed by force.

As to treatment: There is no remedy in the world equal to salicylates. Some are salicylates and some are not. You may go and search out a hundred samples and perhaps one sample out of that is good. There are salicylates sold in the drug stores that are not worth five cents a pound. It makes the patient sick; but if you will get salicylates that are genuine, that are made from Wintergreen by such men as Merrill and Squibbs and Wyeth and such other chemists, then you will get results, and you are not going to get them without it. My advice to you is, when you give salicylates, write down "Merrill salicylates," Squibbs', etc. Unless it is good, it will do your patient more harm than good. If you expect to

cure these cases of endocarditis or rheumatic fever, you must give a salicylate that has the brand of an honest man behind it. Why do so many fail? Because they give remedies that are not good in themselves. The drug itself is worthless. Now put these children in the bed. Keep them there one month after you think you ought to turn them loose; let their hearts have a chance to get well and I think that each one should have a month's vacation in bed, any way, to make them good and strong. That is my idea of rheumatic fever. It is a rare disease. It does come and it does hurt the heart, but it is not responsible for all the bad hearts. Sometimes rheumatism, so-called, is not rheumatism. There are many cases of arthritis, of one sort and another, that have nothing to do with rheumatism; therefore there is no need of treating a case of arthritis deformans, etc., that you may see along with the remedy that is put down there as a specific in rheumatic fever.

"Acute Rheumatic Fever, Etc., Dr. J. B. Greene, Asheville.

I am glad the essayist mentioned the tonsils as a portal of entry, but I am sorry he stopped there. It appears to me, in every case of this condition the tonsils should be removed, and thoroughly removed. You cannot hope to prevent the second attack, unless you remove the tonsils and remove them thoroughly.

Dr. Faison: As to the tonsil: We are all persuaded to believe that the tonsil is the gateway into which the bacilli enter the circulation. Therefore, if the tonsils are bad, they should be removed. Streptococci and staphylocci were the cause of one of the worst cases of endocarditis with ulcerations that I ever saw. I do not believe in removing from the human race any part of the body that God Almighty put there, so long as it is well or remedial. He put it there for a purpose. So long as these parts are in healthy condition, I ask

you to let them alone; but when they become diseased, then they ought to be removed and thoroughly removed. I am sorry to say it has been my experience in tonsil operations that a lot of botched-up surgery has been done in North Carolina. When tonsils ought to be taken out, take out the tonsils and the capsules and everything, so that the child may not have rheumatic fever. When he is subject to tonsilitis or anything, take out tonsils. I saw a child the other day who had tonsilitis. I told him he ought to have his tonsils taken out. He said to me, "But, Doctor, they have been removed twice." I said, "No, they haven't." He said, "I paid to have them taken out twice." I said, "Perhaps so, but all the same, they were not removed."

A PLEA FOR A MORE THOROUGH STUDY OF MATERIA MEDICA AND THERAPEUTICS.

Dr. K. G. Averitt, Cedar Creek.

When the chairman of the Section of Materia Medica and Therapeutics asked me for a paper on this subject, I hesitated because the field has been so fully covered by the journals and text-books, that it is almost impossible to write anything that has not already been written and discussed.

However, the chairman is such a nice, energetic young man, and has such a nice way of coming at you when he wants you to do a thing that it is almost impossible to deny him, and after careful consideration of the subject, I have decided that the field is thoroughly covered by the authors, but that the study of the drugs, their uses and what has been said and written about them, is too much neglected.

To my mind there are many reasons for this neglect, but of these reasons two are most responsible.

1st. In this day of surgical precision and progress, we all spend much time and thought on operations that none of us, except those with well equipped hospital facilities, can perform, and thus neglect the study of drugs and therapeutic measures that would help our patients and enrich our pocket-books. I would not for one moment decry surgery, or throw anything in the way of its study, because it is the duty of every practitioner to be well read in modern surgery in order that his patients may always have the best advice as to what is necessary in obscure conditions and what operations are necessary for their relief. I do think, however, that the practitioner should at least give as much time to the study of Materia Medica and Therapeutics as he does to surgery, because the great majority of his patients are medical cases, and are entitled to the best treatment known to the profession and if

their physician is not qualified to give such treatment, they will seek it from another physician or from some of the numerous quack concerns, and he will be the loser.

2nd. The numerous proprietary advertising firms have been quick to catch on that the physician neglects Materia Medica and Therapeutics more than any other branch of the medical course and that he is therefore poorly qualified to write prescriptions and compound remedies for the relief of diseases and with an eye to business they flood his desk with literature that takes very little time or thought to read, and it becomes an easy task to prescribe their preparations, when a little thought and attention to Materia Medica and Therapeutics would give a much better and more satisfactory prescription for both physician and patient.

Finally I believe that the Materia Medica and Therapeutics of the regular school of medicine contain every remedy and method of treatment necessary in any non-surgical condition, and it is the duty of the physician to pay special attention to this branch of the medical curriculum.

THE TREATMENT OF AMEBIC DYSENTERY.

Dr. Roscoe D. McMillan, Red Springs.

Historically, dysentery is among the oldest of described diseases, some symptoms and treatment being known as far back as 1600 B. C.

Hippocrates was the first to describe it as an infection. In regard to the geographical distribution, Ayrs has commented on the fact that "of dysentery it may be said where man is found, there will some of its forms appear."

The term dysentery implies a symptom rather than a single pathologic entity, but the recent works of Shiga, Flexner, and others render the etiologic classification clearer, but the old clinical distinctions of endemic, epidemic, and sporadic dysentery hold good, as well as those of acute and chronic. Also the pathologic varieties, catarrhal, ulcerative and diptheritic, but the etiologic classification is perhaps the best.

First.—The chemical, as from irritating foods and metals, as copper, arsenic, mercury, lead, etc.

Second.—The bacterial or bacillary, as the Shiga, Fleruer and B. Pyocyanneus.

Third.—Protozooal or the amebic type.

Lambl, in 1859, was the first one to offer the suggestion of a specific cause for dysentery. Koch, however, three years before this had demonstrated ameba in sections from an ulcerated bowel, showing a relationship between the parasite and the intestinal lesion. In this country the first ameba were discovered by Osler in 1890, and shortly after confirmation came from Stengel, and from various sources, and now the disease has been found to exist scattered over many sections of this country, and in all parts of the world, but it is essentially a tropical or semi-tropical disease and prevails more extensively in warm climates and in connection with poorly drained soil,

In certain sections of the South, right here in our own neighborhood, conditions are almost ideal for the prevalence of this infection, so this subject should be one of lively interest. Unfortunately it is scarcely regarded by the profession in a light at all befitting its high importance. It is a very regrettable fact that by most physicians in private practice, and even in the best hospitals in the Southern sections of the United States, it is not recognized as a distinct disease.

The records of most of them, 90 per cent. I venture to say, classify amebic dysentery under the general term of "chronic dysentery."

Amebic dysentery is a colitis, very rarely an ilio-colitis, caused by the ameba dysenteriœ of Councilman and Lofler; it is considered by most authorities different from the ameba found in the stools of healthy man, to which alone the name ameba coli is given. It would be very interesting, did time permit, to discuss the various views advanced by pathologists as to the real etiologic factor in these cases.

The parasite is water borne, or it may be conveyed by contaminated soil to the mouth by dirty hands or from eating green vegetables grown in sewerage polluted ground. The parasite is from 15 to 20 m. in diameter, having an outer zone (ectosarc) which is clear, and an inner zone (endosarc) which is granular, contains a nucleus, several vacuoles, and perhaps some foreign bodies as bacteria, blood cells, etc. Its movement is characteristic. It moves by putting forth protrusions of the ectosarc in various directions, for a time not changing its location until presently the endosarc gushes forth into an unusually long protrusion and the ameba move across the slide.

The essential feature of the disease is always an ulceration, inflammation of mucosa more or less general. The submucus coat becomes odematous, there is infiltration and this raises the mucus membrane in round patches, necrosis sets in and

the membrane sloughs. The ulcers formed are either round, oval or irregular, they extend to various depths, so sometimes perforation of gut becomes a complication. The ameba are also found in the tissue, around the ulcers, in the lymph spaces, and in small blood vessels. Abscess of the liver is one of the most serious complications, and this probably takes place through the portal vessels.

The characteristic lesions of the disease are always found in the large bowel, and the generally accepted belief is that the primary site of infection is in the cecum, whence the infection is carried by natural forces throughout the colon and rectum. It is claimed by some that the distal portion of the ileum is sometimes involved, but this is denied by the best authorities.

The symptoms do not differ much from those due to ulceration of intestines from other causes. Loose stools, discharges of mucus, pus and blood, tenesmus, abdominal distention, loss of appetite, strength and flesh, and a progressive anemia, but these are not always constant or clearly defined.

The disease is essentially a chronic one, and occasionally during its course, there are times when the patient thinks he is well, or a great deal better, as most all of the symptoms have subsided, going even so far that the patient may suffer somewhat from constipation. The parasites are, however, so to speak, under cover, and soon break out under certain conditions favoring a renewed activity. When the diarrhea occurs it does not follow any set rule, as a great deal depends on the location of the ulcers, if they are low down in rectum there are frequent evacuations accompanied by marked tenesmus. If the lesions are in sigmoid or above it the movements may not exceed two or three per day. Mucus sometimes is absent, but blood or blood streaked mucus is fairly constant.

As I have said, the symptoms are not always constant or clearly defined, so a bedside diagnosis should not be relied upon

entirely. A careful examination per rectum and by using some of the simple methods of examination, the diagnosis should present no difficulties. The ulcers are characteristic, they show a tendency to extend in direction of the circular muscle fibers of the gut. They are covered with white or dull grey pellicles, the removal of which leaves a raw bleeding area. The microscope should be used, the slide being warmed to body temperature, and specimen carefully handled, the ulcer should be scraped and should be free from mucus and fecal matter, the cover glass firmly pressed down on slide. When present, the ameba with their characteristic movement, are sufficient for diagnosis.

Leucocytosis is always present and is in proportion to the severity of the disease.

The diagnosis and treatment is of utmost importance because of the utter hopelessness of a great number of cases being allowed to drag on until they yield to no treatment at all. The actual sources of infection are numerous, so prophylaxis becomes a complicated problem, and its scope is beyond the prescribed limits of this article, but I do want to emphasize hygienic and sanitary measures. The first in regard to the patient; this includes fresh air, sunshine and cheerful surroundings, in some cases change of climate may be helpful, especially through its effect on the general health. The sanitary measures in regard to those in close proximity to patient. Instruct the nurse or attendant on the absolute necessity of destroying all discharges from the bowel and cleansing hands after waiting on patient. The infectious agent is probably in the main water borne and the danger of contaminating the water supply should be carefully explained.

Second.—Rest is always of great importance.

Third.—Diet. For a few days it is well to restrict him to liquids. Predigested foods, peptonized milk, soft toast and soft boiled eggs are sometimes well borne.

Fourth.—Medication by mouth. I don't believe there is any known drug administered by the mouth which will retain sufficient potency after going through some 20 odd feet of intestines, to have any direct influence on the ameba. I am fully aware that ipecac coated with salol given in large doses is lauded by many whose opinions are entitled to all respect, but speaking generally, the administration of medicines by the mouth should be resorted to only in the presence of clear cut indications. The routine administration of any of the so-called specifics is strongly condemned, but I do believe in the beginning, and from time to time, a mild mercurial purge should be given.

Fifth.—Local treatment. Irrigations per rectum with cleansing antiseptic solutions constitutes, in my opinion, the main dependence in a large number of cases. A wide diversity of opinion exists even here, as to the most effective solutions to use, but solutions of quinine are most widely approved, beginning at 1 to 5000 of a body warm solution, used twice a day for a few days, and gradually increasing to 1 to 1000, and at least half a gallon should be introduced before any of it is allowed to return. Later, as patient improves, every other day, or twice a week should be often enough. This should be kept up for some weeks after patient seems cured, and certainly until after repeated examinations fail to reveal any ameba. The success of this treatment depends on certain details in carrying out the irrigations, namely, marked elevation of hips, insertion of small rectal tube three or four feet into colon, and retaining the fluid for at least 15 or 20 minutes. Other solutions, as boric acid, common salt, hydrastis and silver nitrate have been used and recommended by some.

When the rectum is very irritable, a preliminary injection of some anodyne solution, as cocaine or opium, will be required.

But in spite of all, I have said, some cases do not yield to

rectal lavage of any of the solutions I have named, no matter how thoroughly used, and in these cases I think surgery offers a very promising field. The operation of choice is appendicostomy in which the caliber of the appendix is used as a means for successful medication of large bowel. If for any reason the appendix is absent or has suffered disease, the cecum is the next resort. The solutions for use here are the same as used per rectum. But understand, I do not claim this as a curatife procedure, but it does offer in certain cases the only possible means of gaining access to the ulcers when they are situated very high up. I will not go into the technique of operation, but if it is performed under proper conditions by competent operators, it should give no larger mortality than operation for appendicitis. The disease itself is by no means free from danger to life, as one single complication such as amebic abscess of liver causes a far greater mortality rate than that of appedi-costomy.

"The Treatment of Amebic Dysentery," Dr. C. W. Stiles, U. S. M. H. Service.

Mr. President: In this State I have found, thus far, at least two different species of amebia—the ordinary non-pathogenic entamoeba coli is present in from 10 to 40 per cent. of our population, according to the localities from which we get our people.

The pathogenic ameba E. histolytica, I have not found so frequently. In fact, I am surprised to see so few cases as I have come across in and around Wilmington. E. tetragena, the other pathogenic form, I have not yet recognized in a single instance in this State. It has, however, been found in Florida, and I expect to find it sooner or later, here.

In regard to one point that the essayist brought forward, namely, the origin of the disease. The essayist has accepted the universally adopted view on this question. But I do not

believe that amebic dysentery is very frequently a water-borne disease. It seems to me that the circumstantial evidence in North Carolina—I have sudied the question in and around Wilmington—demonstrates almost conclusively that amebic infection is a fly-borne disease.

Take in a cotton mill village, you may find from 20 to 60 per cent. of people affected with ameba. The only water supply will be a deep well 150 feet deep, thoroughly closed. The entire village is furnished with surface closets and is on a sandy soil. To assume that 20 to 60 per cent. of people become infected with amebic spores that have passed from those surface privies through 150 feet of sand to deep wells, calls for too much imagination. I cannot believe it. The infecting stage is microscopic, invisible to the naked eye, and could easily be carried with other filth by the flies. Not one iota of proof has ever been advanced to show that amebic dysentery is a water-borne disease. The view is simply an assumption that has come down to us. There is not an iota of sound proof to support this generally recognized view, held universally by the medical profession not only in this country but in Europe.

The fly, however, does give a much better clue to infection.

As for diagnosis, there is a little trick which has been developed recently to differentiate between a true amebic dysentery and an infection by a non-pathogenic form. I understand that Dr. Allen of Charlotte developed this point, quite independently of other men. I regret that he did not publish the point. Not knowing that he had developed it, I, unfortunately, published the point. You can obtain a differential diagnosis between the forms by simply keeping the stool for six to twelve hours and giving the spore a chance to form. The spore of the non-pathogenic form is just as characteristic as is the hook-worm egg. If you examine a true case of dysentery, however, you will find greater difficulty in discovering

any trace of the ameba six to twelve hours after the stool is passed, unless you use a very large technique and hunt for the minute spores. The spores vary according to the species.

In diagnosis I do not scrape the ulcers, but turn to the examination of the stools. It seems to me that if the infection is severe enough to be of any significance, you are usually going to get the amebae in the stools, but one should examine more particularly the mucous discharge.

The treatment I am following in the Marine Hospital in Wilmington is quite similar to that which the essayist brought out. In addition, however, I give bismuth in large doses. with the patient in bed; the patient receives a milk and egg diet, and a daily enema of quinine. First, 1 to 5000 and gradually increasing 1 to 1000 or 1 to 500.

I have had some interesting cases come to me that had been under treatment for two or three years, under various diagnoses, and have had those cases clear up in ten days' time.

I think we are not giving quite the study to this matter in this State that we should. We have been inclined to think that Dr. Allen has exaggerated matters. Dr. Allen has, however, distinctly the better part of the argument, and the only point in which I am inclined to differ with him is not in regard to the statistics, but with regard to the species he has found, and within the last year Dr. Allen has come around on this point, so there is really no difference of opinion between us.

"The Treatment of Amebic Dysentery," Dr. S. T. Harris, Highland.

I, fortunately, have had much experience with this disease.

The paper and the discussion has covered the ground most thoroughly, with the exception of treatment. I have used all of the remedies suggested here this evening, except bismuth

injections. I have found that the use of peroxide of hydrogen injections gives prompt results, and that the disease is very favorably influenced by the use of nrotropin by mouth. I have yet to see a case but what could be managed by proper rest and peroxide injections.

"The Treatment of Amebic Dysentery," Dr. D. A. Garrison, Gastonia.

I have treated two cases diagnosed by Dr. Allen, with ipecac. Deprived of emetic principal; gave from 40 to 60 grains a day, and gave castor oil in two-ounce doses every other night. These cases improved rapidly, and one case had been passing the bloody stools for six months, and in three days I believe the blood stopped, and then they began to improve. This was my first case. It has been a year since I stopped the treatment, and the patient is entirely well and strong.

I am treating a case now that I diagnosed myself (I do not know whether it is right or not). She has improved, and on the fifth day the blood stopped with the above treatment.

The ipecac is given 30 grains a day, and then gradually increasing. I have given as much as 70 grains and gotten quicker results. There is no trouble at all from it. I give it straight in a tablet form. I get this remedy from Burrough Williams Co., New York. That is the only place I can get it in the United States.

You will see improvement in three days, and in six days I have not seen a single case in which that blood has not stopped.

"The Treatment of Amebic Dysentery," Dr. ——.

I am glad to see Dr. Stiles has mentioned the fact of flies. My practice is mostly among cotton mill people, and I certainly see the effect of flies in all bowel troubles. In my practice of a year I have practically diagnosed two cases of amebic dysentery, and at present have two other cases which

are, clinically, surely amebic dysentery. I have never been able to get a specimen to the microscope—undoubtedly necessary in diagnosis.

In regard to the treatment by ipecac: The cases I have treated, I believe the ipecac can be pushed too far. I push the treatment to 60 grains at bed-time, of Park, Davis & Co.'s salol coated pills, and gradually increase until I get 60 grains, and continue that for about three days. A diarrhoea which was just as bad, if not worse, set in. I stopped the ipecac treatment immediately and it seemed almost impossible to stop the diarrhoea, and also a secretion of all of the digestive organs. I gave almost everything but finally stopped it. After examining the specimen I found the ameba there. I started the ipecac again and it did the same way, so I stopped it. I depended almost entirely upon quinine, high irrigation, and reduce it down to as low as 1 to 500. The patient is improving rapidly, and now I give him a dose of calomel and I have found by experience to give him a large dose—from 8 to 12 grains—about every six weeks.

TUBERCLE BACILLI PRODUCTS FOR THE TREATMENT AND IMMUNIZATION—(A BRIEF REVIEW OF PROGRESS).

PAUL PAQUIN, M.D., ASHEVILLE.

It is now twenty-three years since Dr. Samuel G. Dixon, then Professor of Hygiene in the University of Pennsylvania, propounded the hypothesis that by means of tuberculosis material attenuated and used by inoculation one could produce special resistance to tuberculosis in animal tissues. He suggested the use of a *thorough tubercular filtrate* for the purpose, whatever by this he may have meant. His monograph appeared in the *Medical News* of Philadelphia, October 19, 1889. This was probably the first public utterance suggesting practical means to treat tuberculosis along the line of toxic organic therapy, and it was based on his experiments so he claimed. In 1890 Professor Koch, at the International Medical Congress in Berlin, asserted that he had discovered a method of inoculation by which susceptible animals were made capable of resisting tuberculosis, but he did not then give any details. In August 20, 1890, in the *Bulletin Medical*, Paris, Drs. Grancher and Martin announced that they also had devised a method by which this result could be obtained. In November 1890, Koch brought out his tuberculin under the name of "Lymph," hence the name "Koch's Lymph." It was not, according to certain prints, until later, however, that he published a statement disclosing the formula of this lymph, which proved to be a *concentrated culture fluid,* the tubercle bacilli filtered out, (the material reduced in volume by heat) and this was, and still is, it appears, his first tuberculin, a name given by Bujwid and accepted by Koch. From this beginning sprang all the tuberculins.

All of those who were engaged in medicine at the time of

Koch's announcement will recall the furore which it created. Physicians from every country flocked to Germany, and tuberculin therapy was soon after inaugurated. Very early in its development, however, it was discovered that while in certain cases it gave seemingly brilliant results, many striking failures occurred and numerous disasters were charged to it, —so much so indeed that most excessive prejudices were created against the system and related treatments, not only in the public mind, but among the profession at large—prejudices which have their traces before our eyes in a more or less pronounced form today. But among those who believed they had seen good results from tuberculin, or from the serum of animals having been treated with tuberculous material, that some who judged that there must exist some therapeutic substance of therapeutic merit in the direct and indirect products of the tubercle bacelli, and kept on studying and experimenting. Koch persisted in spite of the discouragements which he met and the rough discredit suddenly hurled at him from many quarters.

The Pasteur Institute, with Grancher as leader in this particular work went on experimenting. Maragliano started investigations and carried on tests along the line of antitoxins, and has pursued some work ever since. Klebs, Ehrlich, Behring and numerous others in Europe carried on researches; and from that time and right along afterwards, a host of investigators and clinicians have been busy pursuing the tubercle bacillus and hunting a specific to kill it. In our own country Dr. Karl Von Ruck began research work at a very early date and has never ceased his efforts. To him perhaps more than to any other scientist in this country we owe the dissimination of the practice of tuberculin and related therapeutics on this continent. I myself long ago, carried on experiments along the line of serum therapy in tuberculosis by the treatment of horse blood with tubercle bacilli cultures dead and alive, using

such serum after such treatment as a remedy, and became enthused with the hope of eventually evolving a specific serum as was Maragliano on the same path. Thus fifteen years ago, were pulmonary and surgical cases cured who are living still.

And thus has progressed the work to secure specific medication for tuberculosis and its prevention, until today, hundreds of reliable laboratories and thousands of sound clinicians all over the world are engaged in research work and clinical demonstrations. All those who followed the results obtained from the beginning or since, and who were not repelled by the failures that marred the successes finally reached the point where they know more or less clearly how to use tuberculin and kindred preparations with safety and effectiveness. Indeed, modern tuberculin and tubercle bacillus substance therapy has reached a place of distinct vantage in specific medication,—one which can no longer be disputed. In fact, it is now only among those of the medical profession who do not understand serotherapy and the tuberculins sufficiently or who are prejudiced beyond reason that we should expect serious skeptics. Surely, with the wealth of experimental data at hand, with the numerous favorable clinical results reported, with the present advanced methods of manufacture of products from the tubercle bacilli and their administration, nobody in the profession should longer shrug his shoulders in doubt when one speaks of them as valuable remedies, even though they are not yet perfect perhaps.

But it is not only as a therapeutic agent that the tubercle bacilli preparations have a great field to benefit humanity. Far more important for the growing and coming generation, is the claim that at last we have reached a stage in researches with regard to immunity in tuberculosis, that a vaccine effective has been evolved to protect children (and adults of course) against this disease. This claim seems to be the outcome of the study of several constituents of the bacilli and

their chemistry, and experiments therewith. This momentous chievement is credited to Dr. Karl Von Ruck, whose labors I have just mentioned, and who advises the profession that he began to vaccinate children *eight years ago,* as explained in his preliminary report in *The Journal of the American Medical Association* for May 18th last. It has been my privilege to study in a measure the basis of the work he has done in that line; to see microphotographs of the microscopic slides showing the disintegrating effect of blood serum of innunized children and adults on the tubercle bacilli; to listen to expert explantations bearing on the whole subject, and to witness a practical demonstration on myself beginning with blood study to the practice of vaccination inclusive. No one going to the same measure of inquiry could fail to be impressed.

So now, from his protracted work and his expressed conclusions, it may be stated that a claim is made in all the seriousness of scientific conviction for a new vaccine of world wide concern, perhaps even more portentous than was Jenner's discovery of smallpox vaccine, if it proves to be what its author promises. It has been launched to be sure and it should be remembered, upon the seas of medical practice and hygiene against tuberculosis. All this is so new that it were not appropriate for me to expand upon the matter, but it is fair that due consideration be given it here, particularly because, aside of the human wide importance necessarily attached to it, the situation will be, if this discovery is put in practice successfully, that tuberculin proper, while at this time and for years to come must remain important from a therapeutic point of view, its need will grow less, if this vaccine will, as there appears every reason to believe, prove in larger numbers and in general use, as efficatious as he has shown it in the 339 children which form the basis of his report, in which he says that the *true field for the use of the specific products of the tubercle bacillus is in prophylactic vaccination.* Time will tell.

Now, however, as proof of the merits of this vaccine, there would seem nothing wanting according to Dr. Von Ruck. It would appear that the only question unsolved is the duration of the immunity conferred. On first investigation, that seems to be the conclusion unavoidable in a disinterested student's mind after close study of the author's animal experiments and of his results in the practical application of his preparation in human beings.

Doubtless the announcement of this vaccine will be weighed carefully by the authorities in a position to test it, and many there will be, who will instantly doubt the efficacy of the preparation for, it has been held quite generally, that there is no true immunity in tuberculosis or that it is never complete, that specific treatment causes more of an increase of natural resistance to the tubercle bacilli than a specific demonstrable immunity. On the other hand some high authorities have claimed, even only recently, that perhaps we had *not yet discovered the real or chief* active immunizing substance or substances of the tubercle bacillus. Is it possible that Von Ruck has found such? Or have his methods of isolating the immunizing substance reached a perfection not hitherto attained in the production and use of tubercle bacilli preparations? Doubtless some additional explanations will be given us in his forthcoming complete report recently promised. For these reasons it will be agreeable to know the details of his formula as far as practicable, the more so that there prevails an opinion that all tuberculins, no matter of what make, and all products from the tubercle bacillus, if they act at all therapeutically or as prophylactic, act on the same principle.

There is indeed a universal confusion in calling all such preparations a tuberculin no matter what they represent.

In the number of preparations there have been made additions in the last ten years. Numerous ones have emanated from the laboratories of experts all over the world. Among

these the use of true tuberculins and of emulsions predominate in medical practice. Dr. Von Ruck and his followers alone apparently, stand apart and *discard* everything of real tuberculin nature in favor of substances derived *directly* and *exclusively* from the body of the tubercle bacillus wholly freed from all material of culture media. So, his preparation *is not* in the *tuberculin class at all;* from his explanation it consists of all the proteins of the bacillus and a small amount of fatty extractives and comes under the head of vaccines because it immunizes, and this immunizing power comes from a lysin capable of dissolving the bacillus of tuberculosis. This appears to be the first time that a *lytic* action of the serum of such as who have been treated with products of T. B., i. e., capable of dissolving the tubercle bacillus in vitro and in the body of animals and human beings *has been claimed to be found.* Tuberculin proper, according to Von Ruck, has no such effect directly, whatever it may do along that line by stimulating, irritating or inflaming tuberculous foci.

It will be seen then, as already stated, that true tuberculins are culture products, pure and simple, as was Koch's first preparation, and that they contain no tubercle proteins, save occasionally, by accident as above stated, i. e., when made from old or slow cultures, wherein a slight degree of antolosis of the bacilli had taken place. So generally, tuberculin in whatever form, is lacking in immunizing properties, while the bacillary proteins only are capable of inducing immunity. Nevertheless, thousands of recoveries and arrests of tuberculosis are credited to preparations classed as tuberculins, among which the emulsions of tubercle bacilli are probably the most valuable. Many of these cases which were benefitted, were so, probably not because the tuberculin augmented or induced immune bodies (amboceptors) but because the patients already possessed specific amboceptors which become available by its influence upon tuberculous lesions, owing to the stimulation

and vascular turgesence it produced by focal reactions, which can be caused with the same result by Hetol, contharidin, vibration or anything else that brings about an increase of blood and lymph flow in the tuberculous lesion.

There exist no doubt many tuberculin preparations today without any part of the immunizing bacillry proteins in them, —culture media preparations, including useless no specific albumoses, peptones, etc. Some of them are reactive to a dangerous degree. Probably the *extremely* reactive ones are *no better* than the so-called *milder kinds*, which term by the way is not of clear meaning and needs definition.

This is not by any means a complete statement of the nature or status of the tubercle bacilli products recognized for the cure or prevention of tuberculosis today. One might discuss the technical details of such agents and explain such things as the aglutinins, precipitins, etc., as understood by laboratorians in explaining the production and effect of the therapeutic and vaccine preparations for tuberculosis, but this would only serve to confuse the main facts mentioned as to their action in producing specific immunity and local vasculam stimulation. In fact, the study of these questions is handicapped by a too numerous nomenculture. Probably, at this stage of laboratory technique, we often use different names for substances and actions which later will be found identical. It is not essential to be versed thoroughly in laboratory technique, however, to apply a properly prepared tubercle bacilli product. But in any event, when using any tuberculin, particularly a kind with strong reactive properties one should act with caution, under careful observation of the patient and proper record control.

Geerally speaking, there is a tendency, today, among the clinicians of experience, to use the tuberculins at a degree of activity and of quality (of which the efficiency of course has been determined) which will produce the *least* reaction to be-

gin with, and thence to go on up slowly in applying them, always keeping down to a minimum the focal and systemic reactions. It is claimed by some, that the more intense the action of a tuberculin the more speedily they arrest tuberculosis. That is probably true at least occasionally, but it is also true, that this method sometimes causes dire and indeed fatal damages. So it would seem better to take more time and insure safety, giving reasonable promise at the same time of a probable cure eventually.

We should not forget, however, the factor of phogocytosis in considering immunity, whereby bacteria are eaten up so to speak by certain white blood cells, and thus plays a role in immunity. This defensive function is apparently intimately related to the sepcific influences of bacillary products and probably dependent upon lysis—*the germs being swallowed by the phogocytes after their death.*

The focal reaction mentioned may vary in intensity from a stimulation to an irritation, or inflammation and go so far as to cause pneumonia. When sufficiently active it is manifest by general febrile exhibitions of more or less serious character, in which event we say that we have a *general* reaction. It is these severe reactions which many of the modern phthisotherapists are trying to avoid by the use of so called *mild tuberculin treatment,* among which were first perhaps Lichtheim, Denys and Schnoller. But can there be such a thing as a *mild tuberculin treatment* in the proper sense of the word mild? This designation probably has reference to weak dilutions of strong tuberculins, which may contribute satisfactorily and as effectively in the ultimate as the more strongly reactive doses in stimulating the vascularity of tuberculous lesions. My own experience leads me to agree with the opinion that such light dilutions are sufficient and safer than the more pronounced agents. This is decidedly the opinion of Sahli of the University of Berne, recently expressed in a new

book on tuberculin therapy. So it may be said, that the arrest at least of human tuberculosis, may be credited to small doses of tuberculin far apart, free of severe reaction.

I have also spoken about unsuitable cases for the use of tuberculin. I cannot go into details here, but I may point to certain conditions of patients of that class. Of course it is obvious that the earlier the case the easier to arrest or cure. However, occasionally, some comparatively advanced cases do end comparatively well; these are such as have still good digestive powers, assimilation activity, low temperature and limited, localized destruction of tissue with a fair amount of physical endurance. As a rule, mixed infections with high fever, considerable softening, advanced cavities, great emaciation with a dry skin, inanition by virtue of laryngeal involvement can scarcely be expected to respond. In fact, where nature's physiologic forces in the cells of the blood and structures have fallen below the line where they can nourish themselves sufficiently neither tuberculin, vaccine or any thing else need be expected to arrest the ravages of the tubercle bacilli. I would sum up this paper with the following propositions:

1. That tuberculin as a therapeutic agent, has a proper place in medicine and has reached a stage where it deserves the most serious consideration by the profession in general.

2. That all forms o ftuberculins have healing effects in tuberculous cases of a suitable kind, but that this effect may be *specific* by inducing and augmenting immunity against the T. B. or *non specific* through vascular stimulation by (gentle) focal reactions.

3. That the dosage of tuberculin is not susceptible to a fixed maximum or minimum by following which one may expect comparatively assured identical results; it is not to be dosed as strichnine or morphine for instance, but rather by optimum measures, these to be based on the pathological conditions in each case, beginning with low dilutions and minute quantities.

4. If by low dilutions one can produce in the foci a sufficient stimulation to favor curative results without great irritation—it would seem unwarranted to use the stronger and more dangerous tuberculins.

5. That to arrive quickly at the proper dosage in a given case in practice, a long experience is of great value, but that in any event, save among expert laboratory technicians, the dilutions made by scientific producers of tuberculin, are safer for the clinician than his own.

6. That failures by errors of *detail* diagnosis, unscientific administration of tuberculin, improper management of cases where success might have obtained are not uncommon.

7. That it is perhaps always useless, to use tuberculin, or anything of the kind, in any case, where cellular nutrition has reached a point where emaciation with dry skin and high temperature exists, or in cases with numerous or large and advanced foci of destruction; or in cases of massive and extensive infiltrations with high temperature, or advanced fibrosis.

8. That the newly reconized vaccine against tuberculosis, to be used as a prophylactic measure deserves *the immediate* and *most serious* consideration at the hands of the medical world at large. And right here let us understand that this preparation being capable of causing a lytic solvent action upon tubercle bacillus is necessarily also to be considered suitable for therapeutics. And since it is almost non reactive and only a few doses suffice for the serum to show lysis it would seem at once a desirable remedy.

9. In conclusion I feel it timely to state, that it is unfortunate, that clinicians and sometimes even laboratory workers, continue to confuse the words serum and tuberculin. Tuberculin is not a serum. Tuberculin is a preparation of culture media as already stated, and its therapy is in no sense serum therapy.

Dr. C. A. Julian, Thomasville: *Mr. President*: I am very much pleased with this paper.

There are some points that I think ought to be brought out. The danger of the indiscriminate use of all forms of tuberculin, especially in the hands of men who do not understand the administration of the remedy. I think that immunity is a subject that every man should be familiar with, and I am sorry that very few know it. Today we have but few authorities on the subject. I believe in immunizing children before the dose is given; and there is no dose that you can describe, of tuberculin, and I believe that every man who administers the dose should be a laboratory expert. He should be able to know, after he has administered the dose, whether he has secured immunity or not. In my experience with incipient tuberculosis in children, and non-tubercular children, 1 to 3 doses of tuberculin have produced immunity.

Now the point that I want to make is this: the remedy is in the hands of people who do not understand tuberculin. It should not be used indiscriminately, and after using it, you should know what results you are getting, and results can only be seen positively by blood tests.

Dr. Paquin closes: *Mr. President*: This has been a long discussion and has switched out on lines not touched upon by me in the paper. There are some gentlemen here in the hall who are experts in tuberculosis and tuberculin treatment. I had hoped to hear something of usefulness from them. Men like these have done work for years in the treatment of tuberculosis and the study of the disease. Therefore they are in a position to speak and to be of service to humanity. I should like to hear some of them confirm or deny the principle and results of the chief propositions I have raised; namely, prophylactic vaccination against tuberculosis, (citing Dr. Von Ruck's preparation).

I scarcely think it is worth while to go into the question of

inheritance as broached to us in this discussion, or those side issues brought forth by the speaker who branched into inheritance. Suffice it to say that we have no such thing, it appears, as actually inherited tuberculosis, in the true sense of the meaning of inheritance, though to some minds there occurs the idea of transmissions of the disease in such manner that it appears to them as having occurred under the laws of inheritance.

The question discussed by Dr. Julian, namely, "The Indiscriminate Use of Tuberculin," is in need of the most earnest consideration. There exists in the market today many tuberculins of different types, or origin, about which it is given or not given what the dose shall be. When not given the dosage is left to the practitioner, who must go into more or less technical details about which he ought not to be burdened, unless he is familiar with laboratory techniques, both with reference to organic chemistry and pathology. A general practitioner without experience in tuberculin therefore is not comfortable or safe in using certain kinds of tuberculin. As to dosage: Indeed, we can scarcely have any such thing as a fixed dose of tuberculin in the sense that we understand dosage for ex-poisonous drugs,—such as morphine and strichnine, for instance.

For reactive tuberculins, at least, or other reactive products of the kind the dose must be gauged for each patient individually, as a rule,—under the experience and judgment of the practitioner; and then the results must be studied, understood and scientifically controlled by processes involving both clinical work and laboratory tests. Dr. Julian's experience in prophylactic treatment of children made with Dr. Von Ruck's new preparation, I understand is worthy of serious consideration.

And in conclusion I would say to those who doubt the merits of prophylactic remedial measures in regard to tuber-

culosis might do well to go to the center of scientific experimentation and research in that line, whether in America, Europe or Asia,—for Japan is working also, and intelligently—and study for themselves the situation at present and what it promises for the future in the arrest of the white plague.

SECTION PEDIATRICS.

DR. PAUL V. RINGER, ASHEVILLE.

Gentlemen:

What few words I have to say are merely introductory to the better work that will follow. The time has passed when pediatrics can be looked upon as simply part and parcel of general medicine, just as the time has passed when children can be looked upon as simply little adults. I believe that they have, in a large measure, a phraseology all their own, and just as the eliciting of their symptoms must naturally be gone about in a different manner from that adopted in dealing with adults, so their treatment is based upon what they can stand and the mode which must be followed in dealing with them.

Certainly the pediatrist has the greatest field of any man dealing in prophylaxis. As will be pointed out in future cases. the malformation of the throat, the tonsils, etc., also attention to general hygiene, to the home—to the child—all these play a tremendous part in bringing forth an individual that is healthy and able to take his place in the world.

In the case of diagnosis, certain difficulties present themselves, and certain facts that are easier in our brothers of riper years.

First, the child cannot mislead the physician in the symptoms which are of little or no moment. The difficulty is that all of the signs, practically, elicited from children, must be objective, but the objective sign is usually far more accurate and more rational.

As to the question of diagnosis: there is no question but what the great majority of affections of children deal with the upper or lower respiratory tracts, or with the alimentary canal. Only in a few cases do we have to go beyond those particular instances. Of course that leaves out the examination, which is in a class to itself.

As to the question of treatment: We have three or four

things which I think should stand first and foremost in the eyes of any pediatrist. First, rest; secondly, the very great efforts of feeding, in which too much pains cannot be taken, and into which too much detail cannot be injected; thirdly, the use of various specific remedies, some of which will be pointed out in the papers to be followed in this section; and fourth, the keeping away of drugs. It seems to me that the fewer drugs given the child, the sooner the child will be well.

With the exception of the laxative, it seems to me drugs have very little place in the treatment of children. It is a case of feeding, attention to general hygiene,—of attention to the child's whole life; and I believe that in that way we can more benefit our young patients than in any other mode of procedure.

THE PATHOLOGY OF SYMPTOMLESS UNILATERAL HEMATURIA OF THE SO-CALLED ESSENTIAL OR IDIOPATHIC TYPE.

Dr. R. L. Payne, Jr., Norfolk, Va.

Until a few years ago I had held firmly to the tenets of my medical training, that hematuria from one kidney must be due to a new growth, stone or tuberculosis. All of the standard text-books of my student days taught that symptomless hematuria was angi-neurotic in origin and not one of them told us that the disease could be unilateral. My attention was first called to this condition by the following case:

Report I. J. C. Male. Age 45. Complaining of several attacks of right-sided renal colic and constant bloody urine. Family and past history negative. Physical examination revealed a fat, well nourished man with absence of any cardio-vascular lesions. Both kidneys were in their normal position, neither could be palpated on deep inspiration and there was no tenderness on deep pressure in the loins. Cystoscopic examination showed a normal bladder with blood coming from the right ureter, and clear urine from the left. Ureteral catheterization showed blood, hyaline and granular casts from the right kidney, normal urine from the left. Bacteriological examination of the right specimen negative; x-ray showed an enlarged right kidney and an indistinct shadow which we thought to be a stone. Operation revealed an enlarged dark kidney, lobulated with adherent capsule. Complete section from pole to pole and down to the pelvis showed nothing except a congested cortex. The kidney was closed by mattress sutures and from that day to the present time the patient has been free from colic and hematuria.

In studying the literature I find numerous surgeons have had many such experiences and in searching for an explana-

tion various reasons have been assigned as the cause of this most unusual condition. While Rayer, in 1841, mentions unilateral hematuria, Socoloff in 1874 (Berlin Klin. Woch. 1874, II. S. 233) first reported a definite case which he ascribed to an interference with the nerve impulses to the renal vessels—a condition which we now recognize as angio-neurotic oedema. Following this report, Sebatier (Revue de Chir. 1889, p. 62), Legueu (Ann. des Mal. des Org. Gen. Urinar, 1891, p. 564) and Broca (Gaz. Hebdomadaire 1894, No. 50) record cases which they ascribe to this same angio-neurotic cause. Just about this time Sanator (Bertin Klin. Woch. 1891, No. 1) came out with a powerful monograph refuting the cause of angio-neurosis and declaring local hemophilia to be the exciting factor in these cases of unilateral renal bleeding. Aiken (quoted by W. E. Lower) follows Senator and reports seven cases of hemophilia of the kidney. these cases representing three different generations of the same family. Guthrie (Lancet 1902, I, p. 1243) reports twelve cases of renal hemophilia in the same family, the inheritance being entirely through the females. Atlee (St. Bartholomew's Hosp. Jour., Dec. 1901) reports three most unusual types of renal hemophilia. The arguments against the theory are that hemophilia is not a local process and these cases do not bleed from elsewhere; the condition does not follow injury and does not occur in families.

In 1897 Klemperer (Deut. Med. Woch. 1897, No. 9 & 10) created quite a stir among the internists by expressing his belief that the so-called essential or idiopathic hematuria is due to a paralysis of the vaso-constrictors with dilatation of the renal vessels and a resulting diapadesis. This condition he called angio-neurotic oedema of the kidney and from this paper the various text-book writers received the impetus for the teachings so often found therein.

The first article of dependable worth came from de Keersmaecher (Ann. des Mal. des Org. Gen. Urinar 1897, Feb.)

when he first called attention to inflammation in one or another form as the exciting cause of idiopathic hematuria and showed the definite entity of unilateral nephritis. Pousson (Assoc. Francais d'Urologie 1900, p. 100) reports cases of symptomless hematuria in which he found inflammatory alterations in the glomerulus. Hofbauer (Mitt. aus dem Gren. der Med. u. Chir., bd. V, S. 423) also describes changes in the glomerulus. Laurent (Deut. Med. Woch. 1901, No. 13, S. 193) and Israel (Klinik der Nieren, Berlin 1901) report cases of hyaline degeneration of the blood vessels while Rovsing of Copenhagen (British Med. Jour. 1898, II., p. 1547) found circulatory disturbances and thickening of the capsule. Albrecht and Lowenhart (quoted by Albarran) describe interstitial lesions in the pyramids.

The most valuable contribution to nephritis as the cause of essential hematuria came from Kretschmer (Zeitschrift fur Urologie 1907, I., p. 490) in which he collected 129 cases from the literature, 52 of which showed definite microscopic changes of nephritis. He principally found lesions of the glomeruli and desquamation of the epithelium in the convoluted tubules. Lower (Ohio State Med. Jour., Oct. 1910) reports two cases with nephrectomy in which the microscope showed nephritis. Casper (Arch. f. Klin. Chirurg. IXXX.) writes that nephritis is at the bottom of all these cases and if delicate tests for a sufficiently long time are carried out, albumen and casts will be found; failing, the case may still be one of *nephrosis circumscripia.* In this connection Schuller (Wien. Klin. Woch. 1904, XVI., 477) and Israel (Klin. der Nier. Berlin 1901) both say nephritis can exist without casts or albumen. Rigdon (Calf. State Jour. Med. Nov. 1910) reports two positive cases of nephritis as the exciting cause and argues that hematuria is the initial symptom of chronic nephritis. Schenck (Surg. Gyn. & Obstet. July 1911) reports two cases showing nephritis. Kotzenbergs (Zeitschr. fur Uro-

logie 1908, 125) reports twelve cases which he believes due to a bilateral toxic nephritis. He thinks the hemorrhage in these cases is the initial symptom of the nephritis, but at the time of observation only one kidney showing blood. This is most untenable, for very rarely does the other kidney ever bleed.

Along with these cases, E. H. Richardson, in a personal communication to me records a case of bilateral hematuria relieved by a right-sided nephrotomy from which an excised piece of kidney showed parenchymatous nephritis.

Turning aside from the consideration of nephritis, we find Fenwick (British Med. Jour. 1900, No. I., p. 248) describing angioma of the papillae as the cause of the so-called essential hematurias and reporting six such cases. To support Fenwick we find McGowan (quoted by Lower), Pilcher (Annals Surgery May 1909), Cabot (Amer. Jour. Med. Sciences, Jan. 1909), Whitney (Boston Med. & Surg. Jour. 1908, Vol. 158, p. 797) reporting similar cases and Hale White (Quarterly Jour. Med., Lond., Vol. 4, No. 16, 1911) records five cases of angioma of the papillae seen in Guy's Hospital. Rovsing (Ibid) and Israel (Ibid) both admit the presence of nephritis as a cause of symptomless hematuria, but argue that usually there must be some more definite cause for the bleeding and lay stress on tuberculosis, new growths and ascending infection. In this connection, Albarran (Assoc. Francais d'Urologie, 1900, p. 104), Kapsammer (Quoted by Albarran) and Davidsohn (quoted by Albarran) report cases showing minute *foci* of tuberculosis. Albarran says the least lesion of nephritis is capable of determining the vascular or angio-neurotic modification capable of leading to bleeding. Rovsing (Ibid) says local infection plays a more important part than toxins in the production of the nephritis and Chute (Amer. Jour. Urology, Vol III., 1907) argues that the nephritis may be toxic or infectious. He further says the infectious type may show blood and pus or an absence of pus with inflammatory

changes remaining in the kidney after the infectious agent has disappeared. Billings (quoted by Lower) reports a few infectious cases due to colon bacillus which were treated successfully with autogenous vaccines. Squier (Jour. A. M. A. Dec. 2, 1911) reports a case relieved by nephropexy, but a careful study of his report would force the burden of cause of cure upon the nephrotomy; the evident cause of blood and pus being an unilateral ephritis of infectious origin.

Since my first case I have personally observed four other cases in my private work, as follows:

Case II. Male. M. L. J. Age 40. Farmer, giving a history of persistent bloody urine for past year with dull pain in right loin. X-ray and physical examinations negative. Cystoscope showed a normal bladder with blood in abundance from right ureter. Microscope disclosed hyaline and granular casts from the right specimen, with absence of bacteria, while the findings were negative in the left specimen. Operation upon the right kidney showed an organ normal in appearance and size. Bisection disclosed a narrow dark cortex, considerable congestion between the pyramids, with a few small clots in the pelvis. The kidney was closed with mattress sutures and after the fourth day the urine became clear. The patient gained rapidly in weight and has had no pain or hematuria since his operation. Three months after operation the urine showed no albumen but a few hyaline and granular casts.

Case III. Female. Mrs. W. W., multipara; age 35. Complaining of repeated attacks of mild renal colic with intermittent hematuria. At times the urine was very bloody. Past history very suspicious of gonorrhea. X-ray negative. Cystoscope showed slight congestion of trigone with a prolapsed, blood-smeared right ureteral orifice. Remainder of bladder normal. Catheterization of ureters showed blood, with abundance of granular casts from right side, nothing in left speci-

men. Bacteriological examination negative. Operation disclosed a very large lobulated kidney with many adhesions, making delivery quite difficult. Nephrotomy showed several patches of scar tissue scattered throughout the parenchyma, but nothing else. The kidney was closed and during the convalescence the patient had a few attacks of mild pain due to the passage of clots. The urine cleared up before she left the hospital and there has since been no pain or hematuria.

Case IV. Male. P. M. J; age 54. Complaining of profuse intermittent hematuria with absence of pain. Physical examination showed a pronounced anemia with great loss of weight and strength. Palpation of the kidneys and x-ray examination revealed nothing. The cystoscope showed a blood-stained bladder with the hemorrhage coming from the right ureter. Catheterized specimens showed blood, hyaline, granular and bloody casts from the right kidney, while the left specimen was negative. Bacteriological examination and tuberculin test were negative. Operation and bisection of the kidney showed nothing abnormal but congestion. Following the operation the urine became clear and has remained so to the present time. This patient made a very rapid gain in weight and has been actively at work since leaving the hospital.

Case V. Male. H. B.; age 48. Farmer and alcoholic. Gives a history of periodic attacks of hematuria without pain or other symptoms. The usual examinations together with x-ray showed nothing, while the cystoscope revealed a normal bladder and normal ureteral orifices. Catheterized specimens disclosed an absence of blood from both sides, but albumen, hyaline and granular casts from the right kidney and normal urine from the left. Two subsequent ureteral examinations one month apart gave the same findings plus blood from the right side one time. Between these examinations the patient had several attacks of hematuria, but living ninety miles distant

I have never seen him during an attack. He has steadily refused operation, but the case I believe to be one of unilateral nephritis with hematuria as the initial symptom and a nephrotomy certainly indicated.

Just how nephrotomy helps these patients is quite an interesting question, but it is to be presumed that it relieves congestion and by dissolving the continuity of the blood vessels in some way interferes with the afflux of blood. Experience has shown that nephrotomy has a favorable influence on the hemorrhage and pain of toxic nephritis and owing to the compensating hypertrophy of the intact parts of the kidney, the functional capacity does not seem to be lessened by incision and prompt suturing. Furthermore, in not a single case reported in literature has the procedure of simple nephrotomy failed to relieve this so-called essential hematuria.

Dr. J. M. Parrott: *Mr. President*: I do not feel able to discuss that paper, but I do not think that we should permit a paper of that value to be filed without having our attention called to it.

Dr. Payne has, in a very clear, concise manner, emphasized the microscopical aspect of the pathology of those cases. The practical value of the paper, however, is that it has called our attention to the fact that all cases of hematuria associated with pain, are not, necessarily, indicative of stone in the kidney. I have never seen but one case to recognize it. I confess that in this case I made a diagnosis of stone in the kidney; but on operation I failed to find it. The patient entirely recovered, and I think the cure was due to the operation, and I believe that the manner in which a cure is affected in cases similar to that is based on the same theory of the cure of nephritis by the Edeballd operation.

Dr. Hubert A. Royster, Raleigh: There are certain facts of which we are very certain, in kidney diseases, and there are certain other conditions about which we are very ignorant. We know this: That there is no distinct, dividing line between medical and surgical diseases in the light of our present study; secondly, that every case that has albumen and casts is not nephritis; third, that every case of real nephritis is not necessarily fatal. They do recover. Now the things that we do not know are these: In what category to place a certain number of these cases whose cause we cannot discover. Essential hematuria, idopathic hematuria, must be relegated, in our present knowledge of the pathology of the kidney, to the old classifications of disease. That is to say, when we do not know the cause, we say it is idiopathic or essential, but the cause is there, we may be very sure.

When we get a case of bleeding from the kidney—and I say from the kidney, because I rule out everything else below it, which is the first step—we are confronted with a proposition which may be divided into possibly three classes. The first, and the common one, is stone in the kidney; secondly, growths in the kidney; third, a group of conditions which have been described by the essayist under, perhaps, the names of chronic congestion, acute congestion, small angiomata and the like. It is our duty in these affections not only to classify the case as to whether it demands medical or surgical treatment, and certainly you ought to make the proper diagnosis in the beginning, but it is our duty to determine, if possible, which kidney is affected and the nature of the disease, if it is at all within our knowledge to do so. You know fifteen or twenty years ago they were stripping the capsule of the kidney in some of these cases where they found no trouble, and relieving the symptoms. Many got well. I remember several of those cases during my interneship in the hospital, and they were not explained, and the condition did not return.

On the other hand I am sure you have seen cases of bleeding from the kidney in which you gave the regular medical treatment and the patient got well and has had no return for fifteen or twenty years. We simply do not know what caused that.

As Dr. Payne says, if we can trace down the cause of these things, we can determine the treatment. It is a very difficult matter to tell, in most cases, just what is in that kidney. Whatever cures a case is proper treatment. Let us never forget that the kidney is a subject of growths, and that most of the growths in the kidney are malignant, and that therefore most of the growths in the kidney will bleed; but most of them are associated with painless hematuria; so if you get a hematuria from the kidney that is painless, the first thing you will think of is a morbid growth.

Let us understand then, in conclusion, that when we do not know what is the matter, we are apt to say it is idiopathic and essential; but in the case of bleeding from the kidney we should not stop with that classification, but try to trace it down to the condition which is producing the bleeding, and then try to relieve it.

A NATIONAL DEPARTMENT OF HEALTH—THE PROVISIONS OF THE OWEN BILL.

L. B. McBrayer, M.D., Asheville.

What is the Bill? The Owen Bill, or Senate Bill No. 1, as it is now known, and as reported favorably and unanimously by the Committee on Public Health and National Quarantine, second session, being the present session, 62nd Congress, Report 619, April 13th, 1912, provides:

"For an independent establishment to be known as the United States Public Health Service, which may be called the Health Service, under the management of a director of health appointed by the President, with the advice and consent of the Senate, at a salary of $6,000 per annum, with tenure of six years, unless sooner removed for cause.

There is transferred to said Public Health Service the present Public Health and Marine-Hospital Service; that portion of the Bureau of Chemistry of the Department of Agriculture charged with the investigation of the adulteration of foods, drugs, and liquors, and with the execution and enforcement of the act of Congress relating thereto; and the Division of Vital Statistics from the Department of Commerce and Labor.

That there shall be in the Health Service, as assistant to the Director of Health, three commissioners of health, two of whom shall be skilled sanitarians, and one a skilled statistician, appointed by the President, by and with the advice and consent of the Senate, who shall serve at the pleasure of the President on the recommendation of the Director of Health. The head of the Public Health and Marine-Hospital Service,

the head of the Bureau of Chemistry charged with the investigation of the adulteration of foods, drugs, and liquors, under the act approved June 30th, 1906, and the head of the Division of Vital Statistics, shall comprise the three commissioners of health above established with the same salary for each as now fixed by law, respectively. The commissioners of health shall perform such duties as are required by law, and such as shall be prescribed by the Director of Health not in conflict with the provisions of this act. In the absence of the Director of Health, the commissioners, in order named above, shall exercise the duties of the Director of Health as first, second or third assistant director of health.

The purpose of this bill is to co-ordinate the present public health activities of the United States into one independent service, which shall be purely a Health Service. It is proposed to divide the Health Service into the following bureaus and divisions, to-wit: (a) Bureau of the Public Health and Marine-Hospital Service; (b) Bureau of Foods and Drugs; (c) Bureau of Vital Statistics; (d) Bureau of Child Conservation, (already created during this session of Congress); (e) Division of Sanitary Engineering; (f) Division of Personel and Accounts; (g) Division of Publications.

There is transferred to such Health Service each and every function, authority, power, duty and jurisdiction of whatsoever character which may be vested at the time of any transfer in the head of the executive department from which such bureau, division, or other branch of the Government is transferred, and to the extent to which such function, authority, power, duty, or jurisdiction pertains to such bureau, division, or other branch of the Government immediately upon such transfer being made, together with the land, buildings, furniture, apparatus, equipment, and property of whatsoever description, and official records, that belong to such bureaus, divisions, or other branches of the Government so transferred.

All unexpended balances of appropriations available at the time of such transfer remains available in similar manner and to the same extent as if no transfer had been made."

It does not increase the authority of the Public Health Service beyond the authority which it has at present.

Section VII of the bill authorizes the Director of Health to appoint an advisory board not exceeding seven members, as now authorized to be appointed by the Surgeon General of the Public Health and Marine-Hospital Service.

Section VIII of the bill provides for placing the conferences of the State and territorial boards of health and quarantine and State health officers under the jurisdiction of the Public Health Service, in lieu of being under the jurisdiction of the Public Health and Marine-Hospital Service, as at present.

The act does not abrogate or limit any of the rights or duties of any existing bureau, division, or other branch of the Government transferred to the Health Service, but merely transfers them with their present powers.

The Director of Health is directed by the bill (Sec. 10) to report to Congress in writing annually, showing the operations of the Health Service, with an account of all moneys received and all moneys disbursed, and to make such other reports from time to time as may be required by the President or by either House of Congress, and such reports as are in his judgment necessary or expedient.

The bill stands for the interest, for the protection in health and against disease of every man, woman and child in the United States and outlying colonies, under the direction of an organized department, with a dignified head, occupying an authoritative position, with a distinct office independent of red tape. There are no politics in the proposed creation of such a department, and neither altruism nor sentiment are essentially interested in the basic principle which dictates the right

of the people to be served in the preservation of their health and the health of their children. The question is one of sociologic and economic importance and deals directly with the individual as a unit of intrinsic value in the estimated potentiality in the scale of human life as related to his earning capacity and his citizenship.

The bill contemplates an organized campaign against preventable disease—directing its operations towards the impurities in food, hygiene, and in the diseases already grafted upon our people and the prevention of those to come. It contemplates lifting the burdens of the care of the public health from the occasional philanthropy which may do good, but only spasmodically and certainly in a limited way.

Who Oppose It. First we might mention an organization that grew up in a night, like Jonah's gourd vine, but unlike Jonah's gourd vine it has nothing but unholy alliances. According to Collier's this organization is composed of patent medicine venders, and all other kinds of fake curists known to newspapers for the money they spend on advertising. It is also opposed to some extent by Christian Scientists. Certainly Senator Works of California is opposing the bill vehemently; but all Christian Scientists do not oppose it, for a Christian Scientist, a member of the Committee of One Hundred, which committee has done more and better work for this bill than any other single organization, moved the creation of this committee. But the Christian Scientists are about the only sect or cult that could conscientiously oppose this measure, for we readily understand that any one who does not believe there is any such thing as disease would be opposed to the Government spending money to prevent that which they do not believe ever has existed or ever will exist. I will mention one other class of people that may perhaps oppose it, and then I will leave this phase of my subject, for it is to be handled specifically by the next essayist, who with his flippant flings, his unequaled

satire, his bitter sarcasm, his burning words of eloquence, is far abler than I to do justice to the subject. The other class I refer to is the commercial interests.

Judge Lindsey, in his famous articles on "The Beast and the Jungle," has shown how human life and child welfare are ruthlessly sacrificed to commercial interests. The same is true on a far broader scale. One cannot touch the problem of public health at any point without encountering the opposition of commercial interests. The successful efforts of the merchants of San Francisco to suppress the news of bubonic plague, and of the merchants in Southern States to suppress the knowledge of yellow fever, are classical instances. Why, if you were to ask the health officer of Asheville, he would tell you that the commercial interests of that city, as represented by a certain organization, will today throw forty different kinds of fits in a minute at the mention of the word "tuberculosis" and will say, "Sh-h-h-h, don't mention it, if you do people will think we have it here, and it will hurt our business," forgetting that every person within the confines of these United States, and many without, and especially those living at Hendersonville, know that we have tuberculosis in Asheville; forgetting that people in this day of enlightenment and progress want to know, yea, demand to know the truth, and have a right to know the truth regarding the incidents of disease, and likewise have a right to know the truth in regard to methods in use for the prevention of disease before they visit or locate in a town or community. If you were to ask the health officer of Hendersonville, he would tell you that the commercial interests of this city rose up in arms when he wanted to make tuberculosis a reportable disease, giving as a reason therefor that it would injure their summer business. He would tell you that in the absence of such a law, the commercial interests of this city put blinders on their eyes and consciences, and three times daily, and oftener if occasion pre-

sents, lift their hands toward high heaven and swear that they have no tubercular people in Hendersonville, while at that very moment a pitiable sufferer from that dread disease sits on their beautiful concrete sidewalks, on their splendid thoroughfare known as Main street, depositing thereon bacilli by the billions daily, with none to molest or make afraid; while at that very moment their tubercular sanitaria are mocking them from the surrounding hill tops; but undismayed they lower their hands from toward heaven and use them to equally poor advantage stopping their ears with their fingers, and hoping thereby to prevent other people from hearing the echo. They then try to ease their consciences by saying this is only a matter of business, and try to delude themselves into thinking that in this day of enlightenment intelligent people will believe their protestations. The same state of affairs in all probability exists in every other town in North Carolina.

But those who are familiar with health work run into such instances repeatedly. Dr. Wiley pointed out at the Congressional hearing in favor of the Owen bill for a Department of Health, that a health officer cannot develop properly unless he is in an environment in which health is the main interest. It is small wonder that the commercial interests do not want an independent Department of Health. They feel safer with a bureau of health located in a department devoted to commercial interests. Our principal health bureau is now located in the Department of the Treasury, which is—as it should be—more devoted to financial than to hygienic considerations. Our next important health bureau is that which administers the Pure Food and Drugs law in the Department of Agriculture, which is another commercial department. The plans for transferring the health bureaus to any other of the existing departments, such as the Department of Commerce and Labor, or the Department of the Interior, also have the weakness that these departments are dominated by commercial interests.

Who Favor It: First we must mention Senator Robert L. Owen, of Oklahoma, the author and defender of the bill under consideration at this time. Senator Owen introduced this bill of his own volition, and has defended it against all comers, and has secured a unanimously favorable report from the Committee on Public Health and National Quarantine, and hopes to see it pass both branches of Congress before the Summer recess. The thanks of every man, woman and child in these United States are due Senator Owen for his intelligent and faithful work in introducing and defending this bill, and I predict that generations yet unborn will rise up and call him blessed.

The Committee of One Hundred, composed as it is of the leading men of the nation, men who are not fadists, men who did not band themselves together for the particular purpose of espousing the cause of this bill, but for the broader and nobler purpose, if such be possible, of the advancement of science. But they have found in this bill a broad outlet for their intelligence and energy. This committee is composed of such men as Ex.-President Eliot, Mr. Edward Bok, Editor of the *Ladies Home Journal,* Mr. Wm. H. Allen, Dr. Potter H. Guilick C. Stanley Hall, S. S. McClure, of *McClure's Magazine,* and Nathan Straus; none of them doctors of medicine, but all of them true scientists.

President Taft favors this bill. Listen to what he says: "There is also the promise of the Republican platform to make better provision for securing the health of the nation. The most tangible and useful form that this can take would be the establishment of a national bureau of health, to include all the health agencies of the Government now distributed in different departments." "We found, in attempting to enforce rules of health, that the Filipino resented it. He was accustomed through his newspapers and his orators to inquire what we meant by the liberties of America, and by the freedom that

American Government was supposed to secure. When we laid down rules with respect to quarantine, and with respect to a great many things in the consumption of water and food that they had not been used to, they said that we did not seem to know what the first principles of personal liberty were. And it is true that our society grows more complex as the population becomes more concentrated; each man has less of space in which to move about, less of space in which to swing Indian clubs without hitting somebody, and he is bound to conform to the rules which are essential to the health of all. And, therefore, the laws on this subject, though they limit personal liberty in that sense, are essential to the progress of the entire community.

Now, as an original proposition, a movement like this (the conservation of human life), would strike one as the result rather of enthusiasm than of real hope for betterment, because the details which are to be carried out are so numerous, and call for so much labor that it seems hardly possible to expect a fruitful result. But we ought to look about to other experiments of the same sort. We would never have built the Panama Canal if we had not had the Spanish War and had not had army surgeons who had the opportunity to discover what it was that spread yellow fever, and how yellow fever could be subdued. I think I may say that we should never have built the canal if we had not also discovered what it was that carried malaria, for it was as much the malignant malaria as it was the yellow fever that prevented the French from putting through that great enterprise. But we had had experience in Cuba and Porto Rico, and our medical friends, progressing with a love of knowledge and a love of the human race, had developed rules that worked, and today the Isthmus of Panama, which was a hot-hole of disease—a place that one took his life in his own hands to visit—has become as healthful as any of the Southern States."

The commercial interests then must do obeisance to the cause of public health and our profession.

Ex.-President Roosevelt favors it, or rather he did when he was President. No one, not even God himself knows what he favors now, or what he will favor tomorrow. Ex.-President Cleveland, always right, peace to his ashes, favored it. Mr. Bryan favors it. The great Democratic National Platform declared specifically for such a measure; and the last National Republican Platform declared for it in more measured terms. Many State platforms of both parties have declared for it. Both parties in North Carolina declared for advanced public health work four years ago. The Governors of most of the States expressed themselves as favoring a National Health Bureau or Department. The medical profession through its organized agencies, The American Medical Association, and its various and many other societies endorsed it. The National Homeopathic Association endorsed it; and it has been endorsed by many osteopaths, eclectics, etc. The idea has been endorsed by the Grange, by the United Mine Workers, by organizations of railroad employes, and by many other labor organizations; by educational institutions, and by educators without number; by boards of health, of course, by woman's clubs, civic leagues, and so on ad infinitum.

It gives me pleasure to state that both the representatives from North Carolina in the United States Senate favor the Owen bill. In response to a telegram of inquiry, Senator Overman says: "Replying to your telegram will say my inclination now is to support the Owen bill or similar legislation. I have always stood by the medical profession in North Carolina and have been the friend of the profession on the floor of the Senate. Twenty years ago when I was speaker of the House I fought to give them the State Medical Association."

In response to a similar telegram, Senator Simmons says: "Referring to your recent telegram, I beg to say that unless

I change my mind I shall give the bill to which you refer my support, and at this time I can see no reason why I should change my mind. Thank you for calling the matter to my attention."

Do We Need It? The Owen bill is the crystalization of the wish and effort of thousands of men, solely interested in the saving of human life and in raising the standards of health in order that the economic value of human life in this country may be raised to its proper importance. The careful examinations of existing conditions of disease in this country will readily show that the proposed health department is vitally necessary.

Dr. Harvey W. Wiley well says: "Our Government needs maps of vital conditions throughout the country. We should have a map of the United States showing where the cancer belt is; where the greatest tuberculosis area is; where the typhoid area lies; what is the area containing men and women of the fiinest physiques. Such information would be of illimitable value to the nation in an intelligent attempt at the reduction of disease, and would save millions of dollars to the nations now lost by unnecessary sickness and unnecessary premature death."

We need it in order to carry out our international agreements. Listen to one or two sections of this agreement: "Each Government shall immediately notify the other Governments of the first appearance in its territory of authentic csaes of plague or cholera." Again, "That each and all of these respective health organizations shall be instructed to notify promptly the diplomatic or consular representatives of the republics represented in this Conference, of the existence or progress within their respective territories of any of the following diseases: cholera, yellow fever, bubonic plague, and all other serious pestilential outbreaks." "That it shall be the duty of the Sanitary authorities in such port prior to

sailing of the vessel, to note on the vessel's bill of health, the transmissible diseases which may exist in such port at that time."

What happened? The presence of bubonic plague in San Francisco was suppressed by the authorities of that city, and it became necessary for Edward Liccago, President of the Superior Board of Health of Mexico, to apologize to his Government for our failure to keep our international pledge of honor, in these words: "The authorities of San Francisco, California, fearing that the quarantine instructions would perhaps impose upon their commerce a closure of foreign ports, had carefully concealed the existence of the plague and had given clean bills of health to vessels leaving that port." And I am informed that after the presence of plague had been discovered in 'Frisco by the splendid officers of the Public Health and Marine-Hospital Service, the Governor of California and the commercial interests of the city of 'Frisco and the State, prevailed upon the director of our finances, the Secretary of the Treasury, to suppress or withhold this information; and as a result of this the plague was carried by ships leaving our port, into Mexico, necessitating the apology just referred to. And what meager amends is an abject apology for so serious an offense as planting the bubonic plague among the people of a nation? It is further noted that the same officers of the United States Public Health and Marine-Hospital Service found in 1911 that plague had spread beyond the confines of 'Frisco, and of course they reported the truth; and what happened? By some strange fatality these experts were removed from the scenes of their brilliant achievements and sent to Honolulu, to Ecuador, and to the ends of the earth. And this was accomplished by an appeal from the commercial interests direct to the Secretary of the Treasury, who thinks in terms of dollars and cents rather than in terms of humanity and the lives of his people.

Yes, we need a Department of Health presided over by a Secretary or Director of Health, who can look at such problems from the standpoint of the health and lives of our people, and the health and lives of the people of the world, and administer the office with intelligence, honesty and justice toward all, which in the end will be better for the commercial interests, and all other interests concerned. I would like to discuss the value of such a department as expressed in the saving of human life, and give you a thousand other reasons why we need it, but I must hurry on.

Can We Afford It? I must be brief. No business concern in the world would scatter a work of this importance or any importance, through eight different departments, the heads of none of which are expert, or even familiar with this line of work. And yet this is exactly what the United States Government is doing. The bill does not provide for any increase in expenditures, but a correlation of the forces already at work, with a Director or Secretary at the head of it that is an expert in this line, and the continuing of all the heads of the various bureaus and divisions as they now exist.

"If we can afford a War Department to look after our soldiers, a Navy Department for our sailors, and a Department of Agriculture to protect our cattle and hogs and plants, we surely can afford a department the business of which would be to guard the health and the lives of the children, women and men of the nation. Boundary lines offer no barriers to epidemics. Like commerce, they are interstate, and while the rights of the State should be respected, leaving them the fullest liberty to regulate affairs which interest them alone, a central department at Washington should have, and should use, the authority to take control in all emergencies where the general welfare is concerned." The question is not, then, do we need it, and can we afford it, but how have we ever

gotten along without it? And the United States Government, the people, cannot afford to be without it any longer.

In closing let me ask, what are we going to do about it? What is this Society going to do about it? What are the people of North Carolina going to do about it? What is the medical profession in North Carolina going to do about it? Let us do something practical. Let us do something worth while. Let's *do it now.*

I move you, sir, that Dr. W. S. Rankin be appointed a committee of one to take charge of this matter in this State, and that he be authorized, empowered, and instructed to procure copies of this bill as reported by the Committee of the Senate on Public Health and National Quarantine, and—

1. That he send a copy of the bill to the President and Secretary of every County Medical Society in this State, with the request that they bring it to the attention of their County Medical Society immediately and secure its endorsement of the same, and forward a copy of such endorsement under seal, to Senator Owen, and to every member of both branches of Congress from this State; and suggest that with said resolutions they couple a request that the said members of Congress support this bill, or similar measure.

2. That he send a copy of the bill to every County and Municipal Health Officer in the State with a request that he write every member of Congress from this State requesting him to support this bill; and that he bring the bill to the attention of his Board of Health immediately and secure its endorsement of the bill, and send a copy of such endorsement, together with a request to support the bill or similar bill, to every member of Congress from this State.

3. That he send a copy of the bill to every County Superintendent of Public Instruction, with a request that they write the representatives in Congress from this State as above outlined.

4. That he send a copy of the bill to all civic and welfare organizations, with a like request as above outlined.

5. That he send a copy of the bill to all labor organizations and all merchants associations, boards of trade, chambers of commerce, and such like organizations, with a request as above outlined.

6. That in his discretion he send a copy of the bill, and request as above outlined, to such other persons, firms, corporations, life, accident and health insurance companies, and such other organizations and persons as in his wisdom he may deem wise and proper.

7. That the President and Secretary of this Society write Senator Robert L. Owen and express to him the confidence and esteem of the members of this Society, and congratulate him on the splendid work he is doing in the cause of humanity, and assure him of the co-operation and support of this Society in the passage of his bill, known as Senate Bill No. 1, and attach thereto the great seal of this Society.

8. That the President and Secretary of this Society write every member of both branches of Congress from this State requesting them in the name of this Society, and in the name of the Medical Profession of North Carolina, and in the name of the people of North Carolina, to support this bill, and attach thereto the great seal of this Society.

A REPORT OF FIVE HUNDRED CASES TREATED WITH ANTIRABIC VIRUS AT THE STATE LABORATORY OF HYGIENE.

C. A. Shore, Director, Raleigh.

In 1908 the first patient applied for the Pasteur antirabic virus at the State Laboratory of Hygiene, and up to May 31st of this year over 600 persons had been treated and at least as many had consulted us about bites from dogs which proved not to be rabid. We are indebted to the Hygienic Laboratory at Washington for the virus for treatment in the great majority of the cases.

The treatment of the five hundredth patient was completed February 12, 1912, and we can definitely report that there have been no failures of treatment up to the present time. The statistics in this paper are based on the first 500 treated. There was one death of a patient who refused treatment, although badly bitten. This occurred in 1910 in Durham. In almost all cases the patients applied for treatment within a few days after infection, but in several instances the patients were not alarmed until the death of animals which had been bit by the same dog which bit them. At one time, after the death of a young man from rabies in Hope Mills, over thirty people claimed to have been bit by the same dog that bit him.

The patients treated may be classified as follows:

White, 444; colored, 56. Male, 368; female, 132.

Age under 15, 267; 15 to 50, 201; 50 and over, 32.

Infected by dogs, 319; by cats, 42; by cows, 3; by horses, 5; by man, 1.

These patients came from 60 counties, as follows:

Alamance	18	Haywood	4
Anson	3	Harnett	3
Bertie	3	Iredell	7
Bladen	3	Johnston	17

Brunswick	2
Buncombe	5
Burke	1
Cabarrus	9
Caldwell	4
Caswell	3
Chatham	6
Cleveland	3
Columbus	1
Craven	2
Cumberland	41
Davidson	5
Davie	4
Duplin	15
Durham	13
Edgecombe	11
Forsyth	13
Franklin	20
Granville	11
Greene	7
Guilford	38
Halifax	7
Stokes	11
Surry	7
Union	2
Vance	3
Wake	40
Warren	11
Wayne	9
Lee	9
Lenoir	7
McDowell	1
Martin	2
Mecklenburg	4
Montgomery	1
Moore	8
Nash	11
Northampton	2
Onslow	1
Orange	3
Pender	10
Person	2
Pitt	3
Randolph	10
Richmond	11
Robeson	4
Rockingham	15
Rowan	15
Sampson	4
Scotland	6
Stanly	1
Wilkes	1
Wilson	7
	500

1 to 521, inclusive; 21 failed too complete treatment.

A positive diagnosis of the disease was made in 369 cases; a diagnosis by clinical history in 131 cases. In 10 or 12 of the latter treatment was given when infection was doubtful. Application for treatment by months was as follows:

January	39
February	16
March	42
April	37
May	51
June	58
July	26
August	26
September	46
October	64
November	52
December	43

During the same period, or, more accurately, from July, 1908, to May 31, 1912, we have examined 350 rabid animals, as follows:

Dogs	314	Horses	2
Cats	25	Mule	1
Cows	5	Hog	1

These animals were received by months as follows:

January	36	July	14
February	26	August	14
March	47	September	19
April	46	October	33
May	38	November	31
June	18	December	28

It will be seen that the smallest number were received in midsummer months, disproving the old theory of the relation between the so-called dog days and the disease. It is seen that the disease shows no special predilection for any particular season, and this is in harmony with statistics throughout the world, which prove that it may occur in any climate, latitude, or season.

These animals came from 60 counties as follows:

Alamance	14 dogs	Davidson	7 dogs, 2 cats
Anson	1 dog	Davie	2 dogs, 1 cat
Bertie	3 dogs	Duplin	4 dogs, 1 cow, 1 mule
Bladen	3 dogs, 1 cat	Durham	7 dogs
Brunswick	1 dog	Edgecombe	12 dogs, 1 cat
Buncombe	5 dogs	Forsyth	12 dogs
Burke	2 dogs	Franklin	5 dogs, 5 cats
Cabarrus	7 dogs, 1 cow	Gaston	2 dogs
Caldwell	2 dogs	Granville	5 dogs, 1 cat
Caswell	1 dog	Greene	4 dogs, 1 cat
Chatham	5 dogs	Guilford	17 dogs, 1 cat, 1 cow, 1 horse, 1 pony (2 horses)
Cleveland	1 dog	Halifax	10 dogs, 1 cow
Columbus	2 dogs	Harnett	3 dogs
Craven	1 dog	Haywood	3 dogs, 1 cow
Cumberland	8 dogs	Robeson	4 dogs, 1 cat
Henderson	1 dog	Rockingham	6 dogs
Iredell	4 dogs		

Johnston	16 dogs, 1 cat, 1 hog
Lee	3 dogs
Lenoir	5 dogs
Martin	2 dogs
Mecklenburg	4 dogs
Moore	8 dogs
Nash	7 dogs, 1 cat
New Hanover	1 dog
Orange	2 dogs
Person	2 dogs
Pitt	5 dogs
Polk	2 dogs
Randolph	6 dogs
Richmond	7 dogs, 1 cat
Rowan	2 dogs, 2 cats
Rutherford	1 dog
Sampson	3 dogs, 1 cat
Scotland	6 dogs
Stanly	2 dogs
Stokes	2 dogs
Surry	5 dogs
Union	1 dog, 1 cat
Vance	2 dogs, 1 cat
Wake	34 dogs, 1 cat
Warren	4 dogs, 1 cat
Wayne	10 dogs
Wilson	8 dogs, 1 cat

Before this work was taken up in our Laboratory all persons bitten by rabid animals were compelled to go to northern cities for treatment. Just how much has been saved to the State cannot be estimated accurately, but it is certain that it is more than $100 for each patient treated, or a total for the 500 of $50,000. It may be well to state here that the work was undertaken without any extra appropriation and has been carried on without cost to the State. During the last four years there have been five deaths from rabies in the State, all in untreated persons: one in Durham County, one in Lenoir, one in Stokes, one in Cumberland, and one in Nash. We have not been able to secure statistics as to the loss of live stock, but it is annually very large. We get almost daily information about the death of horses, cattle, and hogs in various parts of the State, and the total loss would be astonishing.

The suffering, distress, and loss caused by this disease, cannot be realized except by those who see it daily. There is no wish to exaggerate its importance, and we know that, fortunately, it is not comparable to tuberculosis, and typhoid fever and many other diseases; but so far as I know, it is the only disease which could be abolished by legislative enactment. Our faithful friend, the dog, is directly or indirectly responsible for its dissemination. All mammals are susceptible to

the disease, but with few exceptions other animals outside the canine group do not exhibit the mania for biting when attacked by the disease.

A law, srtictly enforced, requiring the proper muzzling of all dogs that run at large would stamp out the disease in a few years. This has been accomplished in both Germany and England, where the disease was prevalent twenty years ago. It has never entered Austrialia, because every dog shipped into the country must be quarantined for six months before he can be delivered to the purchaser.

The law should be State-wide, or it is not unusual for a rabid dog to run 20 or 30 miles, and local regulations are of minor value. There is a State law at present which provides a penalty for failure to kill a dog which has been bit by a rabid animal, but the law is seldom enforced.

Many cases of the disease are not recognized in dogs, for there is great variation in symptoms, and frequently paralysis sets in before the furious stage is reached. Formerly, the veterinarians were prone to give other names to the paralytic type, but I believe the disease is now generally recognized and reported. It is strange that the sentimentalists are so loath to accept the facts. It would be a far more serious charge against the dog to claim that he naturally was subject to attacks of fury, and it is far kinder to him to protect him as well as man from the disease. The disease never develops spontaneously nor from starvation, excitement, nor fear; it is infections and conveyed only by inoculation, which is usually by means of a bite from the infected animal.

A general acceptance of these facts should lead to the necessary law prohibiting the running at large of unmuzzled dogs.

"A Report of 500 Cases Treated with Anti-Rabic Virus at the State Laboratory of Hygiene," Dr. C. A. Shore, Raleigh.

Dr. Stiles: *Mr. President*: I want to drive another nail

in the dog's coffin, if I may. One of the most unfortunate things in public health that ever occurred was the writing of that little piece about "Old Dog Tray." Now that canine brute is one of the greatest enemies we have, and we ought to face the fact and have a great deal less sentimentality about it. Old Dog Tray, in the first place, is a great enemy to agriculture, and is a great transmitter of parasitic diseases to cattle, sheep and goats. He is the transmitter of two very serious diseases to man: hydrophobia and hydatid diseases. Hydatid disease is on the increase in the United States and is exceedingly prevalent in Iceland. It is common already, in many parts of our country, among domestic animals. On some of the slaughter-house floors I have visited I found 2 per cent. of the animals infected with it, and there is no question but what the disease is more common than we suspect.

It is better to take up this thing seriously and have the law extended even more widely than Dr. Shore suggested. I do not think that we ought to show much mercy to these curs that are running around in proportion to the poverty of the man who owns them. The poorer the negro family, the more dogs that family is likely to have. We ought to get after those dogs and put them out of existence; and this large amount of hydrophobia that has been going over the country in the last few years, with the hydatid disease, demands legislation to the effect that all unlicensed dogs be killed and that a high tax be put upon the keeping of dogs.

"A Report of 500 Cases Treated with Anti-Rabic Virus at the State Laboratory of Hygiene," Dr. C. A. Shore, Raleigh.

Dr. Lewis: Just a word with regard to the history of this work. To put the credit where it belongs, the inspiration came from our lamented friend, Dr. Murphy. When he was in Raleigh on one occasion he talked to me on the subject very earnestly. Said it would cost comparatively little, and

if it could not be arranged for elsewhere he would certainly be glad to have it arranged for at the State Hospital at Morganton. I told him I thought it ought to be done by the State Laboratory of Hygiene, and when the State Legislature met I would see if I could not have it done, and, in the meantime, he might see the Secretary of Agriculture; but he said he could not undertake it. So, when the next Legislature met, I prepared an Act, and it was brought to a focus, and through the kindness of the Marine Hospital Service in furnishing the Virus, this work has been done with very little expense; and I arise to inform some of the younger members of the profession that the inspiration came from our dear friend, Dr. Murphy, of Morganton.

"A Report of 500 Cases Treated with Anti-Rabic Virus at the State Laboratory of Hygiene," Dr. C. A. Shore, Raleigh.

Dr. W. S. Rankin: I would like to call attention to just one thing in regard to this report. I believe the fatality from cases treated, given the Pasteur treatment, is about one death out of every 200 to 250 cases. About one out of every 200 or 250 of these cases that applied to the laboratories throughout the country died. Dr. Shore has a record of 500 cases without a single death. It is a remarkable record, and I desire to bring out the point which Dr. Shore modestly refrained from doing.

"A Report of 500 Cases Treated with Anti-Rabic Virus at the State Laboratory of Hygiene," Dr. C. A. Shore, Raleigh.

Dr. McBrayer: *Mr. President*: The Legislature of North Carolina ought to be an educational institution, when it comes to public health, and especially to dogs. They are not going to be kicking anybody's hound dog around, (laughter) but I think they ought to know about what is being done, and we ought to discharge our responsibility whether they do theirs

or not. We are not responsible for their failure to perform their duty, but we are responsible if we fail to do our duty.

I therefore move that the Secretary of the State Board of Health be requested to have this printed in pamphlet form—it is all right to print it in the bulletin, but they can have it reprinted after it gets into the bulletin, if it goes in soon, at very little expense, and that a copy be mailed to every member of the next General Assembly, two days after they are elected.

Dr. Royster: *Mr. President*: This is not a body for the performance of legislative functions. That should come before the House of Delegates.

Dr. McBrayer: *Mr. President*: I would like to change the verbage so as to avoid the adroitness of my friend, Dr. Royster. I will change that motion so that it will read that the Secretary of the State Board of Health be *requested*.

Motion carried.

"A Report of 500 Cases Treated with Anti-Rabic Virus at the State Laboratory of Hygiene," Dr. C. A. Shore, Raleigh.

Dr. Shore closes: *Mr. President*: I have nothing to add except that I believe, in time, we will get this necessary dog law. I am optimistic about the progress of the human race, and I hope we will come to that some day.

"Remarks on the Management of Pyothorax," Dr. J. M. Parrott, Kinston.

Dr. Joseph Graham, Durham: This is a very important paper of Dr. Parrott's, and one that I have listened to with a great deal of interest. It is a very practical paper. Pyothorax is a very frequent condition and we certainly need methods of improvement in our treatment of it.

I think I can honestly say I have done fifty rib resections for pus in the pleural cavity; but since learning of the teach-

ings of J. B. Murphy, I have almost stopped rib resection. Murphy says anybody can open the chest; who can close it? He likens it to asking a question. Anybody can ask a question, but who would be able to answer it?

When you have a simple fluid thrown out in the chest cavity, and there is no mixed infection, and resect a rib, we have a very severe reaction. As long as that fluid remains sterile it does no harm; therefore, in the case from tubercular pleurisy it is decidedly dangerous to open the chest.

Murphy's methods of dealing with those cases was the introduction of varying quantities of 2 per cent. solution of formalin and glycerin after operation. In that way the fluid remains a sterile water sac and does the patient no harm. In a year or more the water sac is entirely absorbed. On the same idea in empyemia we keep this fluid sterile by the introduction of formalin and glycerine and repeated aspiration. We lessen the infection by the injection of the formalin and glycerine. So, in the past few years I have aspirated and immediately injected the glycerine and formalin. In some of these cases in which we aspirate and inject the formalin and glycerine the patient is not improved, the pus is virulent and the condition continues, and we are forced to do a rib resection and drain. I had one such case this year, in which I injected the formalin and glycerine four or five times, emptying all the fluid that I could, but was finally forced to resect and drain. But, in the majority of cases of empyemia, if the diagnosis is made and simple injection of 2 per cent. of formalin and glycerine, it will sterilize that fluid, and you can then aspirate it, reinject the formalin and glycerine once, or possibly four times, you will then avoid the necessity of opening the chest. I have been fortunate in getting cases tolerably early.

In closing some of these cases of pleural fistula, I have found a great deal of difficulty. With the Beclispaste I have

secured good results. Where adhesions are very marked, I have found Perth suction apparatus to be of great benefit in drawing up the collapsed lung. This apparatus certainly does a great deal of good in *elevating* the lung.

I think Dr. Parrott and this Society are to be congratulated that he has given us newer methods and newer ideas, with such marked improvement in the treatment of this condition.

"Remarks on the Treatment of Pyothorax," Dr. S. T. Harris, Highlands.

Dr. Payne is unquestionably on the right line. The work that has been done in the treatment of tuberculosis of the lung, and its complications, by artificial pneumothorax, has demonstrated the truth of Dr. Parrott's remarks.

Of course a large percentage of all effusions in the thorax have their origin in tuberculosis. The practice of blowing out these effusions by first inserting a trochar low down, and a small needle higher up connected with gas, preferably oxygen, when you do not care to have a pneumothorax to persist, and then blowing out the effusion as you would the contents of an egg, has given remarkable results. If the case is tuberculosis, of course, you would use nitrogen, thus giving more or less permanent pneumothorax, which is the most modern method of treating tuberculosis of the lungs and the most successful.

"Strangulated Hernia With Report of Cases," Dr. J. H. Harper, Snow Hill.

"Strangulated Hernia in Infants," Dr. H. McKee Tucker, Raleigh.

Dr. Hubert Royster: *Mr. President*: The subject of Hernia is always very interesting, both as regards the occurrence of the cases and the method of handling them.

In regard to the first paper, I can say very truly that Dr.

Tucker treated that case very well, and he is to be congratulated upon the result, owing to the circumstances which he explained to you and the age of the patient.

Strangulated hernia in infancy is rare. It appears in only a very small number of cases under one year. This does not mean that hernia in infants is rare; it occurs frequently, but the strangulation does not often occur. Several times very young children have been sent to me for operation, and when they came through the country, over a rough road, the hernia was reduced. That is Nature's method. And, by the way, I think taxis should be relegated to the background. It would be better if no case had ever been touched than to have taxis used on a good many.

Another rarity in hernia work is to see a strangulated hernia in a female. I do not know whether any man in this audience has ever seen one. I wrote to fifty surgeons a year ago, in getting up a paper, and only four of these surgeons had seen more than one case. We have had three cases and all were from the same county, within five miles of each other, and the last two were sent by the same doctor within three days of each other. We do not know precisely why this should be rare in a woman. It is probably because of thin and yielding walls of the ring; and they are not subjected to sudden strains and hard labor, as men are, and then the formation of the canal of Nuck is different from that of the canal in men.

Probably all hernias are congenital. Those studying hernias now have agreed that the division into acquired and congenital hernias is unnecessary, for the reason that everybody carries around with him a potential hernia. The difference is simply in one case the canal is not closed above and the other cases are. But the conditions are the same.

I want to endorse one thing which Dr. Harper said, and that is, that it is much better, and those in charge of hospitals

believe it is much better, for the doctor on the scene of action to operate at once than to send moribund patient to the hospital later on; because anybody can do a strangulated hernia, if he knows anything about anatomy at all, and it is better to do the operation at once if the patient cannot be transported, within the judgment of the doctor, than to send the patient later. If we want to save the patients, the operation must be done early. And I commend Dr. Harper for his technique. It is the man, and not the place.

"Strangulated Hernia With Report of Cases," Dr. J. H. Harper, Snow Hill.

Dr. Joseph Graham, Durham: *Mr. President*: Strangulated hernia untreated, certainly is a very serious condition. I want to heartily agree with Dr. Royster's remarks in regard to taxis. We ought to forget all we ever knew about taxis. Every doctor does not feel competent to do an operation for strangulated hernia, but every doctor ought to know how to diagnose it. Realizing the danger of the condition,—fully realizing that, it is his duty to immediately see that some one does do the proper operation for the patient.

In operating for strangulated hernia I always prefer to operate under local anesthesia, using cocaine as my anesthetic. I do not believe that the occasional operator—the man who has operated once or twice for hernia—will get along well with cocaine; but the men who do these operations fairly frequently and who are familiar with the anatomy of the region and with the various steps of the operation, cocaine is, by far, the most satisfactory anesthetic for strangulated hernia. The reasons why I say so are these:

First, you save the patient the danger of the shock of the general anesthetic; second, we avoid all danger from fecal vomit, and third, local anesthesia has given us the greatest advancement in the treatment of strangulated hernia, in that it

gives us an opportunity to treat the damaged bowel. And that is the important consideration: How much damage has the strangulation done the bowel? Now when we operate on a case of a strangulated hernia and it has not been strangulated long, we find the bowel not much damaged, and simply drop it back and close the abdomen; but in other cases the bowel is damaged more and no man can tell definitely, in the majority of those cases, whether or not it is going to live.

In operating under a general anesthetic we must make quick decision as to what to do with the damaged bowel. In operating under cocaine you can camp with it and treat the damaged bowel.

Sometimes the mesenteric artery pulsates very weakly; again we find that the bowel looks purple; it has gray spots on it, but we cannot say the gangrene has actually begun, and to do an intestinal resection we would add a great deal of danger to our patient and would gradually decrease his chances of recovery.

In operating under cocaine we can bathe the bowel in normal salt solution as long as we want to, and give nature every chance to restore the circulation in the bowel.

My plan in those cases is this: To relieve all constriction, and, if the bowel does not seem badly damaged, I drop it back into the abdomen, cover the wound loosely with gauze, and then plenty of cotton, but do not close that wound, and in three or four hours later I inject some cocaine and gently take it out and inspect the bowel. Now if there was danger I would not put it back in the abdomen but would thoroughly saturate gauze with salt solution, drawing the bowel out gently on gauze, wet with salt solution, cover that with a wire screen, so as to prevent friction of the bandage coming in contact with the bowel, wait and examine again. By that method if there is any chance for the bowel to recover, it will do so. If by that method it does not recover, you can

feel certain you give your patient every chance, and that the operation for intestinal resection was absolutely necessary. And not only that, when we operate on these cases of strangulated hernia, we have severe shock, and if we relieve the restriction they immediately begin to improve ,and even if we are forced later to do the intestinal resection, the patient is in a better condition to stand the operation than had we done the intestinal resection at the primary operation. I think those practical points well worthy of our consideration in dealing with strangulated hernia.

"Strangulated Hernia in Infants," Dr. H. McKee Tucker, Raleigh.

Dr. Tucker closes: I have nothing further to say. Of course there is very little to say on strangulated hernia, that you cannot find in the text-books

Dr. Royster said something there that reminds me of "It never rains but it pours." Shortly after I got this case of the infant, a woman of sixty-five years of age, suffering with strangulated femoral hernia was referred to me and operated on. She was doing very well, but died in two weeks afterwards, sitting up in bed,—probably from an attack of apoplexy.

"The Practical Use of Iodine in the Preparation of the Skin in Operative Cases," Drs. D. W. and Ernest Bullock, Wilmington.

Dr. R. L. Payne, Jr., Norfolk, Va.: The criterion of a good skin antiseptic for surgical work demands that we should have not only a primary union, not only an absence of the breaking down of the wound, but a total absence of even the tiniest drop of pus around a suture, or the smallest amount of redness around punctures. In the hands of different operators various techniques of antiseptics vary so much that it is difficult for us to decide what is the most reliable skin antiseptic

for surgical work. One man, for instance, (I think, Dr. Spruill of Baltimore), had 100 laparotomies in which he used only soap and sterile water, with one infection. The Naval Hospital, Norfolk, had 300 cases in which iodine was used, with three infections. So that would make us ponder whether nature does not, after all, take care of these things in a more able way than any of these methods can do.

My personal experience with iodine has been limited to two years. In my first twelve months I had three infections. The operations numbered about 160 clean cases. The procedures carried out varied, though, and my fears of the value of iodine in the beginning were so doubtful that we have in all our cases used soap and alcohol twelve hours before operation, putting on sterile dry dressing and painting the wound only when the patient is put on the table for operation

A very wise procedure which has been brought out in the Naval Hospital Service is that the value of iodine largely depends on permitting it to soak into the skin, and their technique is to paint the proposed site thoroughly with full strength iodine solution and wait for five minutes before putting on the sterilized drapings for the operation.

In making scrapings from the skin, Bodine of Washington found that he would get cultures up to 40 per cent. strength but in 50 per cent. or more he failed to get cultures.

Evans, of London, reports a large series of cases in which he had only three infections, and these occurred in the inguinal region, where the hairs were so well developed. A good many men have dermatitis in spite of precautions, and it has been our custom, following a point brought out by Dr. Bahnson some years ago, to use absolute alcohol after the sutures have been closed up. This is an elegant antiseptic, almost as good as pure iodine, takes the iodine out of the skin and does away with dermatitis, especially in children and women with tender skin.

"The Practical Use of Iodine in the Preparation of the Skin in Operative Cases," Drs. D. W. and Ernest Bullock, Wilmington.

Dr. Jno. A. Williams, Greensboro: I have used the iodine method that the Doctor has described in about 150 cases, with this addition: Instead of using soap and water—of course the Doctor did not use that. I do not think you should have soap and water if you are going to use iodine. It makes the skin boggy and unless you use it about twenty-four hours beforehand, the skin is going to be boggy. I do not use the soap and water at all. I use 1 per cent. tincture iodine in benzine. Use that to scrub the skin thoroughly, the day before operation. And then after you have scrubbed it and gotten all of the oil out of the skin, with the tincture of iodine in benzine, paint the surface thoroughly with one-half tincture iodine, and one-half alcohol sol. (or 10 per cent. sodium Sul.) put on a sterilized dressing, and then paint the surface again with joint solution just before operating. Then I use the method after completing the operation.

Dr. Payne suggested to wash it off with alcohol and put a pad under the wound and put on the dressing. I never look at them in from six to seven days, and in that series I have only had the one case of stitch abscess.

"The Practical Use of Iodine in the Preparation of the Skin in Operative Cases," Drs. D. W. and Ernest Bullock, Wilmington.

Dr. S. D. Booth, Oxford: I would be slow to undertake to discuss a question pertaining to surgery in the presence of such surgeons as we have with us today, and still more so to question the great value of antiseptics in surgery. Yet the wonderful powers of nature are such that it is hard for us to discriminate between the works of nature and the accomplishments of the surgeon's efforts.

The most wonderful laparotomist, Lawson Tate, of Birmingham, England, thirty years ago had to his credit three hundred consecutive cases of ovariotomy,—all successful, with no bad symptoms, and he used no form of antiseptic in any case. Still more strange is the fact that he held the sutures in his mouth while he closed the abdominal insignent. Whether or not his teeth were sound we are not informed.

"The Practical Use of Iodine in the Preparation of the Skin in Operative Cases," Dr. D. W. and Ernest Bullock, Wilmington.

Dr. Saunders: *Mr. President*: I thank you for this courtesy.

I have been following the same line suggested here, except that I have been using the soap and water. I do believe it is a good thing, twelve hours before hand, to scrape the skin clearly at the shaving and let dry one hour, then, after drying thoroughly, paint with iodine, then next morning, when the patient comes on the table, paint again, and with this method followed I have had practically no abscess with this iodine method.

"The Practical Use of Iodine in the Preparation of the Skin in Operative Cases," Drs. D. W. and Ernest Bullock, Wilmington.

Dr. S. T. Harris, Highlands: In regard to the efficacy of sterilizing the skin with iodine: I have gone into the pleura after first simply painting the skin with 10 per cent. of tincture of iodine, hundreds of times, and have never yet had any infection of the skin or of the pleura.

"An Operative Plan for Correction of Club Foot," Dr. Joseph Graham, Durham.

Dr. Jno. A. Williams, Greensboro: *Mr. President*: I

want to say that that makes mighty pretty reading. It is mighty nice to read a paper like that, but it is much easier to do than it is to do the operation.

I think that is coming to be an operation for that class of cases and I think Dr. Murphy was the first man who began to do that kind of work, and I think he is the best man in this country or any other country on bone surgery and any form of deformity. I think it is a better operation to do than to correct it by putting on casts, braces, etc., and keeping the child confined for from six months to two years before you can correct it. This correction can be made in between four to eight weeks, as a usual thing. The child is able to go to walking on it within eight weeks' time, and I think in time to come that this operation is going to be the only thing to do, when you have a bad case of club foot with deformity of the bones, which cannot be corrected just by the application of casts and braces.

"An Operative Plan for Correction of Club Foot," Dr. Joseph Graham, Durham.

Dr. C. M. Strong, Charlotte: We do not have enough of those operations. We Southern surgeons have neglected that kind of surgery. Of course every man has his own ideas about technique. In the matter of operating for club foot, about the only thing I differ with the doctor's paper in is that I do not use the plaster cast often. I have been disappointed with plaster casts. I simply correct it and use adhesive strips, and, as Dr. Williams suggests, within six weeks, as soon as the child is able to walk, I put on suitable shoes, just as soon as the foot is able. I do not operate on a baby before the walking period. That is a great mistake. I always put them off until they make an effort to walk. In fact, until they are able to walk. I put them in adhesive strips because I have had so much trouble with plaster Paris, and plaster prevents

the use of the muscles, which must be used if we expect to effect a permanent cure. I have been much disappointed in the plaster work, probably because I do not know how to put it on; so I use the adhesive strips and a suitable shoe.

The operation, I take it, simply restores the position; the after treatment, the adjustment of the working part. Consequently this latter must extend over a long period of years until maturity, or until all muscles have done all they can in the way of development.

To simply operate on club foot, in my opinion and experience, is disappointing in its end results.

"An Operative Plan for Correction of Club Foot," Dr. Joseph Graham, Durham.

Dr. Graham closes: *Mr. President and Gentlemen*: I am very glad to have had the interest taken in this paper that was shown by your attention, and I wish to thank the gentlemen who discussed the paper.

The point I wish to emphasize is this: Cases of club foot with marked bone deformity, when the deformed bone blocks the motion of the joint can only be corrected by surgical operation subperiosteal. The attempt to correct these deformed feet, with marked bone deformity, by the application of apparatus and braces is useless.

Therefore the proper treatment of club-foot rests with the general surgeon. We should study the true bone deformity so that we can understand the mechanical and anatomical relationship.

"The Treatment of Pellagra," Dr. E. H. Bowling, Durham.

"A Pellagra Clinic," Dr. S. Brown, Hendersonville.

My experience is limited but I think that that experience might be of some interest to the profession.

A number of years ago I was called upon to treat a young

man with pneumonia The pneumonia ran the usual course, but there was a failure of resolution after this pneumonia. All our remedies and proceedings failed to give this young man relief. I called nearly all of the physicians in Hendersonville to see this young man with me, and we did not know just what the trouble was.

The young man, although he was confined closely to his room, was sunburned all over his face and hands. He proceeded to die, and we did not know what was the matter with him until a little later. That was my first case of pellagra.

Christmas, 1910, I delivered a patient of a normal child and about a month afterwards I was called upon to commit this patient to the insane asylum. I examined the patient before I had her brought in for commitment, and told the family I thought we would make a mistake to commit her, that I thought she had pellagra and we might treat this case to some advantage. I called Dr. Kirk with me, and we decided to give cacodylate of sodium, and such other treatment as she might need. It took her probably two weeks to regain her normal mental condition. I treated her from the 27th of January, 1911, until the 25th of March, giving the cacodylate of sodium every second or third day. She got well and has asked me to wait on her in July of this year for the same condition—not the pellagra.

The man in shirt-sleeves I ran across on the street the other day. He came to me in July, 1911. Was a stone-cutter. Had the typical digestive symptoms and eruption. I treated him with cacodylate of sodium, 3-grain ampules.

I do not mean to say, now, that that excludes other treatment, because I believe that that is needed—the iron and other remedies. We need to treat them symptomatically. This cacodylate of sodium may not have anything to do deep down with eradicating the disease, but the skin symptoms do disappear beautifully. I gave him cacodylate from the 13th of

July to the 22nd of August, twice a week, and had seen nothing more of him. I asked him to let me hear from him how he had been getting on, and he said the other day he had been well ever since. Had no eruption this Spring.

This young lady at the end of the row, whose mother died with pellagra about a month before I was called to see her, applied to me for treatment the 12th of October. I treated her from that time until the 22nd of November. She has been well ever since and has had no return of the symptoms.

Another patient whom I expected here, had a very acute attack. This was her first attack. The eruption was very violent. I saw her the first of August, 1911. The hands and arms to the elbow on both hands, and the face and neck had a very decided sunburn; so much so that she peeled off. I treated her from August 19th to December 16th, with the same cacodylate treatment, not giving it more than once a week, during the latter part. In fact, I did not think it necessary to give the treatment all the time, but she wanted me to do it until she got entirely well. She is working hard in a knitting mill, has gained weight, and says she never felt better in her life, and has had no return of the symptoms this year.

This young lady here had the eruption every Spring for perhaps eight or ten years. She has had the nervous symptoms. The time I began treating her the strongest cacodylate injection I could find in town was 3-4 grs. I started that with not very much results. As soon as I got the 3-grain doses and started that, the symptoms disappeared, but the nervous symptoms remained. She is still depressed and does not know whether she is going to get well or not, though the soreness of the tongue, etc., have disappeared.

Her aunt died of pellagra, and her father has something suspicious looking,—this tall gentleman. I did not know that he had any symptoms until he came in with his daughter this

morning. When Dr. Stiles examines this gentleman, I would like him to tell us what he thinks of this patient. I have made no examination whatever.

The young lady nearest the audience is Dr. Dixon's patient. Applied to him for treatment two or three weeks ago. Will ask to give you her symptoms and treatment. Dr. Dixon, Dr. Bowling and I, and all of the doctors who treat pellagra, have our particular scheme of treatment, and some seem to get well under none of the treatments, and I would like to have a free discussion.

I would like to mention one thing: That nearly all the patients we have mentioned and are exhibiting to you have lived for a time in Spartanburg, and most of them have worked in a cotton mill, at one time or another.

The one on the back seat is a housekeeper in the country, eight or nine miles from town. She has never been out of the County.

"The Treatment of Pellagra," Dr. E. H. Bowling, Durham.
"A Pellagra Clinic," Dr. S. Brown, Hendersonville.

Dr. Guy E. Dixon, Hendersonville: I saw this young lady here about three or four weeks ago,—about the 25th of May, I believe. She came up from Spartanburg; was an operator in the Spartan Mill, I believe. She gave a history of having had the eruption last year. She procured a bottle of some patent medicine—some blood medicine, she said—and the eruption disappeared very promptly and she thought she was well. During the past two and a half months the eruption came on again. She had a very violent eruption when I saw her, extending to the elbows on both arms and hands, and abscess on the hands. You can see the scar tissue now. She also developed a skin lesion on the forward part of the chin, and on the lower lip and into the mouth; then on the front of the neck she had a little lesion, and on both sides of the

neck very extensive lesions, which gradually extended around the neck. She had a violent diarrhoea and when I saw her first she was bedridden and very sick. She gave a history of all the most prominent symptoms—burning of the feet and hands, the digestive symptoms, and the nervous symptoms, bordering on mental symptoms. She was very much depressed and was hysterical. I began the treatment, giving three grains every other day of the cacodylate of soda.

A doctor in Spartanburg, before she came up here, had been giving her for two or three months the calcium sulphide, 3 grains a day. I withdrew that and began the cacodylate, when I first saw her. She is improving rapidly, and during the past week has been able to come two miles to town for treatment.

My habit is to give the calcium sulphide about 3 grains a day, except when they have the skin lesion and severe diarrhoea I give the cacodylate and creosote.

I am inclined to believe in the germ theory of the disease, and am inclined to believe that it is infectious. In fact, I have observed a case in which the mother had pellagra. She died about a month ago, violently insane, and the daughter who had pellagra two years before is apparently well now. The next door neighbor on one side of the house had it, and the one on the next side of the house has very suspicious symptoms now.

There is one symptom that I have noticed just this year that I have never heard reported. In fact I have never talked to anybody that has ever observed this symptom. I noticed it first in an elderly lady who applied to me first of last year for treatment. The symptom that I refer to is the change in the color of the hair. This patient was nearly red headed, and her hair from last year gradually got darker, and four weeks ago, when she died, it was as black as anybody's hair you ever saw.

Then I have a patient, an elderly gentleman, who has had

pellagra a little over two years now. When the first symptoms appeared, he became insane. He was gray-headed. He wore a beard that was almost white, and his hair was almost white. All the symptoms disappeared under treatment except the mental symptoms, and he is apparently well, except for the mental symptoms, and now I observe that his moustache is almost entirely black, and the hair on his head is streaked with gray and black, and his beard the same way, but his moustache is almost black and was nearly white.

This young lady on the end, here, I got a specimen of her hair when I first saw her, and it is turning dark very rapidly in the three or four weeks that I have observed it. And in other cases that I have seen, the patients have noticed the change in the hair themselves.

I have noticed some symptoms in some of my patients with regard to the urine I have found that in a beginning case the specific gravity has been very high The urine has been very heavy, and if the case goes on from bad to worse and progresses very rapidly, the specific gravity in proportion comes down very rapidly. In fact, from the little experience and observation that I have had, I am inclined to have an unfavorable prognosis in the cases in which the specific gravity is very high and gets lower very rapidly.

The cases I have treated,—forty-seven,—with four deaths —I had one case, a middle-aged woman, whom I had treated for general nervous symptoms and a very decided constipation. Like Dr. Black, all of my cases, instead of having a diarrhoea, there is an obstinate constipation at first.

This lady I had been treating for about six years, for various things. She developed the first symptoms of pellagra the first of last June. That is, the first symptoms if we call the skin lesion and the diarrhoea the first symptoms. I made a diagnosis of typhoid fever, at the beginning of the complaint.

She lived just four weeks. Had the most violent case that I have ever seen, and what has been described as the typhoid type.

Out of the forty-seven cases that I have seen nearly all of them are, apparently, well. The three recent cases that I have—this lady that I mentioned with the hair turning black, who is dead, and the elederly gentleman who is insane now, are the only cases I have treated who have not responded to treatment.

As I say, I have been in the habit of giving the cacodylate of sodium and the calcium sulphide. I have been giving nearly all of them enormous doses of calomel. It may sound funny, but I write a prescription for my patients, sometimes, when they are very sick with pellagra—a toxic condition and a violent diarrhoea—for calomel, 10 grains capsule, every Saturday night; give them five or six doses, and I think the treatment does a greal deal of good. I think the symptoms, as far as the skin is concerned, the skin lesion and diarrhoea, will disappear in most cases without any treatment, or in spite of treatment. I think that nearly all of the cases that I have seen that had not been treated, relapsed. For instance, I have seen several new cases this year that had the eruption last year, did not take any treatment at all, the symptoms disappeared and came on again this Spring.

Talking with doctors from different parts of the country about this condition, this has been a late Spring and I find that the eruption has been later this year in appearing than it was last year, and I have had a few patients that I have kept in dark rooms whom I had to wear gloves to protect them from the sun's rays, and these patients, while they have all of the symptoms, have not developed the skin symptoms.

I tried a few experiments last year in regard to the sun's rays. I had some patients that I cut a hole in the shirt on the shoulder,—for instance, in several patients I had them

expose the skin to the direct rays of the sun for a number of days, and all the patients that I did that experiment developed the eruption where the hole was in the shirt, except one, and one patient not ony developed the typical eruption where the hole was in the shirt, but exactly opposite side of the back, where it was not exposed. That seems a little peculiar.

I notice all of my cases the tongue is rather typical. It is furred and has furrows.

I feel nothing gives me as prompt results as creosote. Where the breath is bad and the diarrhoea excessive, I give them creosote.

"The Treatment of Pellagra," Dr. E. H. Bowling, Durham.

Dr. H. B. Weaver: Some of us are from Missouri, but since Dr. Brown and Dr. Dixon have delivered the results, we must accept their statement. If 85 per cent. of cures can be shown, it is pretty good. Pellagra, 300 years ago, was known in Italy. The last few years we have known some of it in this country. My limited experience has been very disastrous as to the results, because I have lost nearly all my patients under every manner of treatment advocated by Dr. Wood, to the present; and I have not been as successful as some of the gentlemen.

The symptoms of pellagra are so classical and definite that a mere tyro should not mistake the diagnosis.

In regard to the pathology of the disease, it is mere theory, but I think Dr. Bowling probably hit the keynote of the situation when he declared it was a toxine which had begun in the central nervous system. For my part—merely a theoretical opinion—I believe it to be a protoza, and very analogous to the spirochaete of syphilis, and that the gentleman's treatment of 10 grs. of calomel might throw some link between the old treatment of pellagra and that of syphilis, and I be-

lieve they are Cousin-German if not similar in their origin. So, what is the pathogenesis of the disease? I had the temerity, two or three years ago, to read a small paper before this Society on the internal secretions, in which I stated that the pituitary body had imperfect control of the jejunum organism, and that the superrenal glands—the all-important organs—are controlled by that little body—the pituitary—which certainly has nervous connection with the thyroid gland, the super-renal gland and the pancreas, and that also it has direct communication and control of the arteries through the sympathetic system, which is proved by the great stress being thrown upon the skin from the alimentary canal. So that when that germ enters the blood, the pituitary, which is a very vascular organ, receives the effect first, as it does from anything else. The first impression is on that very sensitive organ which carries its impressions through the sympathetic system to the internal jugular vein to the pneumogastric nerve, and there acts upon the adrenals, which are stimulated thereby, when it is not paralyzed—as the gentleman says—call it what you please—which enters the blood, goes through the venal cavity to the right side of the heart, meets with the lungs and there forms a new compound and immunizes the body from this new combination. So, then, when that poison enters in such abundance it paralyzes that nervous system and prevents the immunizing process of the body, and we have all these multifarious classified symptoms of pellagra, and when we come to the point that we can find a true anti-toxine for this torine, then we shall have cured pellagra, and I hope it will turn out that the gentlemen's excessive treatment will prove as they assert, and which we have no reason to deny, as the patients are already here, cured.

"The Treatment of Pellagra," Dr. E. H. Bowling, Durham

Dr. Nisbet, Charlotte: I think that we can easily conclude that we need less theorizing and more systematic study of pellagra.

It has been advised by the Marine Hospital Service that we study more carefully the pellagra cases. That we take each individual case, study the environment and the symptoms. That we tabulate into groups and see if, by this plan, we cannot get some basic facts by which we can work out this problem.

In reference to Dr. Bowling's paper, I enjoyed it very much. It presents the subject in a very lucid way. I think the point made just now would apply to his cases; that is, we should have the cases he speaks of tabulated and give environment data.

Another point in his paper: That all cases of pellagra have gastric sub-acidity. My experience does not exactly coincide with his. Two or three years ago I reported ten cases with gastric analysis In that ten cases there was a sub-acidity in five; a normal acidity in one, and a hyper-acidity in four. Since that time, in six other cases that have come to analysis I have found four sub-acid in late stages, and while I have not the exact figures with me, I think if I had them tabulated that I would have found sub-acidity in not over 50 per cent. in early stage. In all advanced cases there is a general asthenia and gastric sub-acidity. In thirty to forty per cent. of early cases there is surely hyper-acidity, and in ten normal acidity, and in fifty to sixty per cent. a sub-acidity.

I think that a point that can be well brought out is this: That we should be very careful in our diagnosis of pellagra. It is possible some of us may have pellagra-phobia, and I think that any one who studies pellagra will agree with me in the statement that the early diagnosis of pellagra is not an easy matter. After the syndrome has appeared, there is no difficulty as to the diagnosis.

As to the treatment of pellagra, I think that of many lines of treatment brought out, that we are almost compelled to come to the conclusion that we do not know one which gives permanently curative results.

"The Treatment of Pellagra," Dr. E. H. Bowling, Durham.

Dr. Siler, Captain Medical Corps, U. S. Army: *Mr. President*: I came here today to secure information but one or two points have been brought out which I would like to discuss. The Thompson-McFadden Pellagra Commission, of which I am a member, is working in Spartanburg County on the etiology of pellagra and I have felt greatly repaid for my visit to this meeting. I enjoyed the paper of Dr. Bowling and many of the points brought out in the discussion. Am sorry to say that I will not be able to go into the matter of treatment, because our work is concerned almost entirely in the etiology of pellagra. One point brought out in the discussion has impressed me, that point being the fact that cases apparently showing acute symptoms in North Carolina have developed at a later date than usual, this year. We have noticed this same fact in South Carolina and the members of the Medical Profession in that State with whom we come in contact speak of the same thing. While connected with the expedition sent out from London headed by Sambon in 1910, we encountered the same conditions in Italy. In the foot hills of the Alps we found that the disease was appearing at a later date than usual and this was explained not only by the doctors but the peasants as well, as due to the fact that the Spring was late, the weather unsettled and it was quite cold. On going down from the foot hills to the plains, however, we found pellagrins showing acute symptoms quite prevalent. Dr. Bowling, as I understand it, inclines to the theory that some bacterial organisms is concerned as the causative factor. Am I correct Doctor?

DR. BOWLING: Yes, sir.

DR. SILER: As to the question of bacterial infections, there is one striking fact which can be cited against this type of infection, though this fact is by no means any proof that some bacterium is not concerned in the causation of pellagra. The point against the bacterial infection is the fact that in Italy we inquired at every institution visited, more particularly those caring for large numbers of cases of pellagra, as to the number of cases which had occurred among the doctors. nurses, or other employes intimately associated with the care of these patients. In no instance were we able to get records of the occurrence of pellagra among doctors, nurses, or other employes. This same fact holds good in this country. During the Summer of 1909, I saw about two hundred cases in the Asylum for the Insane, at Peoria, Ill., and during 1910, we saw about one hundred and thirty-five cases. No doctors or nurses contracted the disease in this institution. These observations hold good for other institutions in this country, so far as I can determine.

I have never felt that corn products *per se* were the cause of pellagra, and this impression was strengthened by observations in the State of Illinois; in this State they raise more corn than in any other State in this country but the people do not use it to any appreciable extent for human consumption. In the Peoria Hospital, at the suggestion of Captain Nichols, Medical Corps, U. S. Army, we carried out an experiment with corn products as part of a dietary. Two adjoining cottages were selected and in each cottage was placed sixty male patients carefully selected and who had not shown evidence of pellagra; these cottages were put in charge of a special physician; in one cottage between ten and fifteen ounces of corn products were given each day; in the other cottage no corn products whatsoever entered into the diet.

Q. Did they drink any corn liquor?

Dr. Siler: No Sir, absolutely none.

This experiment was carried out for exactly one year; at the end of that time the results were checked up and the following facts were observed: In the cottage on a heavy corn diet, four cases of pellagra had developed with one suspicious case, in the cottage in which no corn products had been used we found that five cases of pellagra had developed with two suspects. If the disease is due to a toxin from corn it would seem reasonable to suppose that this toxin must be present and must be eaten at all times. This theory does not harmonize with the results obtained in this feeding experiment and neither does it harmonize with the seasonal recurrence of the disease.

The work of our Commission is not confined to any one particular line of work; we are atempting to do some work along protozoal lines and on the bacteriological side. The intestinal bacterial flora are being studied in the hope that some particular bacterium may be isolated, which is possibly concerned in this disease. In the field we are making careful and thorough studies of each case and the home surroundings of each case.

In reference to mortality rates, it is quite evident that the disease is becoming less severe and less fatal, and it would seem to me that we should be more conservative in our mortality estimates.

The newspapers of the South have done some harm and some good in this connection. It has been customary for them to paint this disease in its worst colors and any one reading newspaper articles referring to this disease doubtless feels that if pellagra develops, their end is not far distant. There is but little doubt that suggestion plays a great part in the development of mental symptoms in these cases and the newspapers should be more conservative in dealing with this subject. On the other hand the newspapers through

this very publicity are bringing to us new cases and cases in which the symptoms are very mild. They have done good in this way because otherwise these cases would not have come to us. The estimated death rates are to my mind entirely too high. In Italy the death rate is less than 10 per cent. and while we cannot be certain that a cure has been affected under less than a two or three year interval, without reappearance of symptoms, many of these cases present no symptoms whatsoever, other than a slight erythema in the Summer time. In Italy I have seen cases of pellagra in which the disease had existed twenty-five or thirty years and in which the usual symptoms were erythema with possibly occasional transient attacks of diarrhoea

In reference to diagnosis: personally I do not believe that a diagnosis of pellagra is warranted in the absence of skin symptoms or a very definite history of skin symptoms. While it is a fact that many of the premonitory symptoms may lead you to suspect pellagra, these same symptoms are or may be present in so many other diseases that it is unwise to make a definite diagnosis of pellagra in the absence of skin lesions.

Dr. Sambon's theory in reference to the Simulium as a transmitting agent is altogether theoretical. During my connection with the field commission which he headed in Italy, it was a fact that Simulium larvae were found in great abundance where pellagra was prevalent but he has nothing more than this upon which to base his theory, so far as actual observations are concerned. It seems to me important that physicians in affected sections in this country investigate this insect as well as other biting insects which may possibly be concerned.

"The Treatment of Pellagra," Dr. E. H. Bowling, Durham.

Dr. I. W. Faison, Charlotte: I am glad that we have all

come to the conclusion that we do not know the cause, and I hope that these gentlemen from Uncle Sam's department will help us to find it.

As Dr. Weaver said, he is from Missouri, and so am I; but If I had pellagra and had to take a dose of castor oil every night, or 10 grains of calomel every Saturday night, I would go to Missouri and stay there until I got well or died.

It is this kind of drugging that I wanted to protest against.

"The Treatment of Pellagra," Dr. E. H. Bowling, Durham.

Dr. Bowling closes: *Mr. President*: There is nothing that I desire to add. I am glad that I have heard such a good discussion. Whenever I give calomel, they always get worse, and I consider calomel almost a death-warrant to one of my cases.

I never give calomel in my treatment of pellagra.

Conjoint Session State Board of Health With North Carolina Medical Society.

THE PRESIDENT, DR. J. HOWELL WAY, *in the Chair.*

DR. WAY: *Mr. Chairman*: As we have a definite program, I will waste no time in unnecessary talk. I will proceed at once to declare the conjoint meeting of the State Board of Health and the North Carolina Medical Society in session.

ANNUAL REPORT OF THE SECRETARY OF THE NORTH CAROLINA STATE BOARD OF HEALTH FOR 1911-1912.

Mr. President, Members of the State Board of Health, and Fellow Members of the North Carolina Medical Society:

I have the honor to submit, in obedience to Section 8, Chapter 62, Laws of 1911, this, the annual report of the Secretary of the State Board of Health. I have asked Dr. C. A. Shore, Director of the State Laboratory of Hygiene, and Dr. John A. Ferrell, Assistant Secretary for the Eradication of Hookworm Disease to prepare and read that part of this report which relates to the work of their respective departments. This they have kindly consented to do. I shall deal, therefore, more directly with the general concerns of the Board.

THE HEALTH OF NORTH CAROLINA—METHOD OF ARRIVING AT CONCLUSIONS.

The writer confesses to the limitation of his knowledge of methods of investigation of public health to one only reliable and universally accepted method. This method of studying health or diseases in any part of the social organism, town, county, State, or nation, consists of a study and interpretation of the vital statistics of the body politic under investigation. Therefore, the only method for studying health conditions in North Carolina, and for coming to conclusions in regard to the physical efficiency of the citizenship of this State is by means of the vital statistics that have been collected. I submit for the consideration of those who form or hold opinions in regard to the health of large bodies of people, without basing such opinions upon a study of vital statistics, that they will become well known in the sanitary world as discoverers if they will point out any other means whatsoever by which health conditions in the body politic may be judged.

The standard of public health is the average death rates of the United States. If the death rate of any County, town, or State is lower than the average, the health of that portion of the body politic is to that extent good; if the death rates of any portion of the body politic is above the average for the entire country, their health is to that extent bad.

The vital statistics in North Carolina for the last complete year, the year of 1911, in which they were collected, apply to a total population of 372,043 scattered throughout the State in municipalities of a population of 1,000 or over. This is one five and ninety-three hundredths (1-5.93) of the total population of the State. If we should take the total deaths and the deaths for the various diseases from our registration area and multiply them by 5.93 our product would be the estimated death rates of the State for the year 1911.

CONCLUSIONS.

Chart A shows the total number of deaths and the number of deaths from certain diseases that actually occurred in this State in 1911, and that would have occurred if North Carolina had had the average death rates that obtained in the registration area of the United States, and which comprises 54,000,000 of the population. Chart B, shows the comparative death rates of North Carolina and the registration area of the United States. Chart C shows North Carolina's death rate as compared with the death rates of other States. Chart D shows the percentage of deaths occurring in three important disease-age periods in North Carolina and the United States.

Let me direct your attention to certain important points of interest which Charts A, B, and C, demonstrate:

First, there is a total loss of 7,573 deaths, in excess of what our State would lose if we had the average death rate of the United States. The death rate of the State shown on Chart B is 18.4. I always think of the general death rate of any portion of the body politic as the analogue of the pulse of a patient. As we use the rise and fall of the pulse wave as the general index to the vitality of the patient, so the best index to the general vitality of the body politic is its rise above or fall below fifteen deaths per thousand of the population annually, the average, the normal pulse of Uncle Sam. You observe from Chart C that North Carolina stands at the bottom of the list of registration States, arranging these States in the order of lowest to highest death rates. Moreover, you should remember in this connection that all the States in the list, except North Carolina, are accepted by the United States Government as registering at least ninety

per cent. of their deaths, and the fact that North Carolina is *not* accepted as a registration State means that the National Government refuses to accept the general death rate here shown as within ninety per cent. of what it should be. The death rate of North Carolina for 1910 was 18.7. We recognize that conclusions based upon statistics for only two years can only be suggestive and by no means conclusive, but even with this reservation it is interesting to note that there is a decline of .3 in our death rate from 1910 to 1911. This reduction applied to the entire population of the State means a saving of 600 lives a year, which capitalized at the average economic value of life $1,700, amounts to an economic value of $1,020,000. With that amount of life saved there was prevented an amount of sickness equal to the yearly total incapacitation of 1,800 people. So much for total losses and general death rates.

Second, I wish to call your attention to certain special death rates. This is all important to the sanitarian in indicating to him the distribution of his forces in the war against disease. However, so long as public agencies for the suppression of disease are insufficiently equipped to prevent *all* sickness and death, it would certainly seem the part of wisdom to turn our guns on those diseases that are affecting the largest number of those interested in the prevention of disease, that is, diseases directly or indirectly responsible for the heaviest death rates. It, therefore, becomes a matter of importance that the sanitarian study special death rates carefully in order to appreciate those causes of death most deserving of his attention.

Turning now our attention to these special death rates I ask you to note first, that North Carolina loses practically 2,000 lives from tuberculosis in excess of what the State would lose with the average death rate from tuberculosis. Note again that the next heaviest loss is from the diarrhoeal diseases of children under two years of age. Here again you observe that the entire excess loss from this cause to the State amounts to nearly 2,000 lives a year. As a preventable cause of death typhoid fever is next deserving of our attention. Our State had last year a triple death rate from this disease, and lost nearly 1,000 lives in excess of what we would have lost had we had an average death rate from typhoid fever. The next disease from a standpoint of death and sickness that deserves our attention is malaria. The fatality from malaria is about one per cent., which would mean that with the loss of 515 lives from this cause in 1911 there must have been about 500,000 cases of chills and fever, or that about 25 per cent. of the population of this State were infected at some

time of 1911 with the *plasmodium malariae*. With these excessive death rates, it is encouraging to know that the death rate of North Carolina from contagious diseases is less than the average that obtains throughout the United States. This fact is explained by the large proportion of rural to urban population in our State. Of course, the more concentrated a population the easier the means for spread of contagion. There is one intensely interesting and important lesson which the death rates from the four principal contagions should force upon this assemblage. As you know, there is great opposition to the quarantine of whooping cough in North Carolina. Some intelligent people are opposed to the quarantine of this contagion, which the census of the United States shows is more important than measles or scarlet fever as a cause of death, and which statistics show causes the death of fifty-four children under one year of age out of one hundred such children that contract the disease. Whooping cough in North Carolina, in 1911, probably because the public did look upon it as one of the necessary evils of childhood and opposed the quarantine of the disease, killed *fifteen* times as many children as scarlet fever, *five* times as many children as measles, and caused almost twice as many deaths as diphtheria, measles, and scarlet fever combined. The suggestion from these figures is unavoidable that the people of this State who dread scarlet fever with its susceptibility of fifty per cent. and its fatality of twelve and a half per cent. demand its quarantine, and who not dreading whooping cough with its susceptibility of ninety-one per cent. and its fatality of ten per cent. oppose its quarantine. The chart shows that whooping cough had nearly a treble death rate in North Carolina where all the other contagions fell under the average.

In the present state of public opinion no consideration of the health of North Carolina can be considered in any way complete without some reference to the effect of hookworm disease on the life of this State.

In prefacing my remarks concerning special disease death rates I pointed out that from a public standpoint the importance of any disease was commensurate to its direct or indirect effect on death rates; for there are no diseases, no matter how mild, that do not serve as contributing factors through one channel or another to the general, and to some special disease death rates. Therefore, the importance of hookworm disease as compared with tuberculosis, diarrhoeal diseases of infants, typhoid fever, and malaria, from a public standpoint, must be judged, first, from the death rate from hookworm disease, and, second, by the general and special death rates from

other diseases to which it can be shown, or it is reasonable to suppose, that hookworm indirectly contributed.

As to hookworm as a direct cause of death: Of 6,857 death certificates filed with the State Registrar for deaths occurring during 1911, in the total population of 372,043, only two certificates assigned hookworm disease as cause of death. Notwithstanding the fact that this disease is, to a considerable extent, a rural disease and that these certificates are from urban populations, still one would expect, from the importance at present given this disease, and in view of the constant influx from the country to the town, a much larger number of deaths from this cause. However, it is generally conceded that a large majority of the cases of hookworm disease in this State, and in the South, are of a milder type and would, therefore, not act as a direct cause of death, but would exert their morbid influence as contributing factors to general and special disease death rates. So turning from hookworm disease as a direct cause of death, let us now examine the disease as an indirect cause of death, or a contributing cause of death.

The standard form of death certificate contains, after the blank in which is written, by the attending physician, the cause of death, a blank in which is to be written the contributing cause of death. It will, therefore, be interesting to examine the 6,857 death certificates filled out by the North Carolina medical profession in which they assign hookworm disease as a contributing cause of death. On only *one* of these certificates does hookworm disease occur as a contributing factor to the death. It is interesting to know, in connection with this, that 55 of the 6,857 death certificates carry malaria as the contributing cause of death.

Such suggestive data as the above warrants a further examination of the influence of this disease on death rates. To what death rates would hookworm be most likely to contribute? In answering this question let us remember the age period in which this disease is operative. In the first place, the disease in this State, and in the South, is contracted in the barefooted period of life, that is, from three to eighteen or twenty years of age. Dr. Stiles' youngest case was three years of age. Nicholson and Rankin reported a case two and one-half years of age. Of 118 cases studied with reference to age, by these last observers, only six per cent. occurred under the 6th year. These facts are in perfect harmony with the etiology of the disease,—bare feet, active life on infected premises, and ground-itch. It would, therefore, be unreasonable to suppose that hook-

worm disease had any part in the death rates of North Carolina under five years of age; nor would we expect to find the disease playing a role of any importance as the contributing factor of death beyond the fiftieth year, because for a number of years preceding that age people have worn shoes and the infecting parasite, long since having reached its natural longevity, has loosened its bloody grip upon the body. Moreover, the diseases that dominate that period as causes of death would require a considerable stretch of the imagination to connect their etiology with an infection of hookworms twenty, thirty or forty years since. This leaves us the age period from five to fifty in which to study hookworm as a contributor to death rates. We would naturally expect the disease to affect death rates during this period, for it is during the first twenty years of this period that at least ninety per cent. of the cases in this State exist, and it is during this age, too, that that class of diseases, the infections, tuberculosis, typhoid fever, blood poison, etc., the diseases whose frequency and effect would be influenced by factors producing a lower vitality, such as hookworm disease, are active. Observe Chart D. Note that the high death rate of the State is under the fifth year, that is, in the non-hookworm period; that the death rate of the State between the fifth and fiftieth year is but 2.1 per cent. in excess of the average death rate for that age the registration area of the United States where there is no hookworm disease. Charging hookworm with the entire excess death rate of this forty-five year period. The disease as a cause of death falls far short of typhoid fever, and is not in the same class with tuberculosis and diarrhoeal diseases of children.

The place of hookworm disease with the other important diseases demanding the attention of health departments will be fixed ultimately by vital statistic reports. Fortunately, there are now three States in the South, Virginia, Kentucky and Mississippi, who have enforcible vital statistic laws, and it will probably devolve upon these States to solve one of the most important phases of the hookworm problem, namely, its effect on public life Until this time the public mind has rated hookworm disease altogether on its frequency. In order to appreciate the importance of this disease from a public standpoint it is not only necessary to know that 800,000 North Carolinians carry the parasites in their intestines, but it is equally necessary to have some reasonable idea, based upon an ample investigation as to the number of worms the average host contains. We must recognize the principle that parasitism is one thing; pathogenesis another

thing. Has the average North Carolinian, has the average Southerner, ten, thirty, fifty, one hundred or two hundred hookworms? For thirty-five college students from which the worms were carefully counted, by the Allen J. Smith method, there was but an average of twenty worms. A letter from Dr. Bailey K. Ashford, of Porto Rico, in answer to an inquiry from me, states that he regards from three hundred to five hundred worms necessary to produce recognizable symptoms; that it would require from seven hundred to fifteen hundred to produce medium or rather severe infection, and from two thousand to three thousand to produce death.

Reasoning from the facts in the case, the vital statistics from this State, a very large part of the thirty per cent. infection of our people is so light as to be, *comparatively* speaking, a case of parasitism more than a condition of pathogenesis, and hookworm disease ranks, in North Carolina, among the other important causes of death, as fourth or fifth in the list, somewhere near malaria—a disease which resembles it in geographic distribution, in frequency of infection, and in its anaemia producing power. It is necessary for public health administrations to recognize preventable diseases in their relative importance, for partly upon that should depend the distribution of their forces in the fight against the different divisions of the foe.

One more disease deserving of some attention in consideration of the health of North Carolina is pellagra. In 1910 there were 115 deaths reported from the registration area of the State, a population of 372,043; in 1911 176 deaths were reported from this same population, which means an increase of 52 per cent. The death rate in the State at the present time is 47 per 100,000, or just double the average death rate of typhoid fever in the registration area of the United States.

There are several interesting points brought out in tabulating the deaths from pellagra. The first is, that the disease shows no discrimination between the races, involving the whites and the blacks in about the same proportion in respect to their relative populations. The second interesting point is, that the disease does discriminate in its relation to sex, season, and section of the State. For example, of the 176 deaths 140 were women and only 36 men. The disease reaches its lowest ebb as the cause of death in December, remains fairly constant until May, when it takes a sudden rise to its maximum death rate in June, remains constant until October, when it begins to decline, reaching its minimum death rate in December; and

finally, eighty per cent. of the disease occurs in the Piedmont section of the State. Looking at the map with the disease located upon it one gets a vague suggestion as to the disease bearing some relation to railroad facilities. It is important that I say to you that the deaths shown on the map, with the exception of four deaths distributed among three cities, occurred among the residents of the town to which the map credits them.

Pellagra at present is a National problem, and recognizing that fact I have written our representatives in the Senate and Congress of the United States the following letter:

North Carolina State Board of Health
Office of the Secretary.

Raleigh, N. C., June 14, 1912.

My dear Sir:—I am writing you in my official capacity to call your attention to a phase of the public health problem which very deeply concerns our State, and a solution for which belongs more to the National Government than to the State Government. I refer to the disease, pellagra.

As you know this disease is comparatively new in our country. In 1910 there were 115 deaths in the registration area of North Carolina, that is, a section of the State in which about 90 per cent. of deaths, with their causes, are recorded, and which area comprises 372,000, or (1-5.93) of the State's population. The estimated number of deaths in the entire State would amount to 680 in 1910; the deaths for the entire State amounted in 1911 to 1,040. You can very readily see that the disease is gaining ground in North Carolina. This disease in European countries has been known to increase very rapidly, and we have no assurance that the present rate of increase in North Carolina will not continue, and that in a short time we may have another disease on our hands approximating in magnitude that of tuberculosis and diarrhoeal diseases of children. Already the death rate from pellagra in North Carolina is 47 per 100,000 of the population, which is exactly double the death rate of typhoid fever in the registration area of the United States, which comprises a population of 54,000,000.

Now, if this disease existed in only *one* Southern State it would be a State problem. But inasmuch as what is happening in North Carolina from pellagra is taking place in every other Southern State, this problem is not an intra-state but an inter-state one, and deserves the attention of our National Government. It would manifestly be eco-

nomically unwise and unfair to expect one or two States in the South to appropriate a sum of money for the study of the causative factors in this disease, with the view of discovering its prevention, when such work would equally benefit the entire South. After the cause of the disease has been discovered and the means for preventing it worked out, then each State can protect its own population by seeing that the preventative measures are applied. The disease, therefore, *after* its means of prevention are discovered, will pass from a national to a State problem, but under the present circumstances the disease is a national problem.

I feel that the responsibility rests upon me, as the State Health Officer of North Carolina, to say this to you, and that much of my responsibility for any future effect of this disease upon our people is transferred to your shoulders when I call your attention to the situation and respectfully recommend that, with the other representatives from North Carolina in the Congress and Senate of the United States, to whom I have written this same letter, you use your influence for securing an appropriation to be used by a commission of experts for the study of this disease in the South, with the view of discovering its cause and the appropriate means of prevention. This commission could be selected by a committee appointed by the Senate or Congress, or it could serve under the United States Public Health and Marine Hospital Service, or in any way that your good judgment suggests.

In conclusion, I wish to assure you that while I have a personal interest in this matter as well as an official responsibility, and while I believe that having had your official attention called to this condition future responsibility is more yours than mine, I shall rest contented with whatever disposition you may make of the matter. However, I wish to assure you that, if I can be of any assistance whatever to you in inaugurating any action looking to the suppression of this disease, my services are at your disposal.

With the highest esteem, I am,

Very respectfully yours,

W. S. Rankin, *Secretary.*

WORK OF THE STATE BOARD OF HEALTH FOR THE PAST YEAR—EDUCATIONAL.

Public health work is still, in this State, largely educational. The executive work of the Board compared with the educational work is

small. The dissemination of the knowledge of prevention of disease through all available channels places in the hands of individuals means by which, to a certain extent, they can protect themselves, even though they live in an unsanitary community, and by its general effect upon the public mind creates a sentiment which will first demand, and later enforce, sanitary legislation.

The agencies through which the educational work of the Board has been carried on are correspondence, bulletins and pamphlets on the more important preventable diseases, and last, but by no means least, a large amount of newspaper work.

The correspondence of the State Board of Health now amounts annually to 10,000 ordinary letters, and in additional 10,000 circular letters, not to mention about 300 regular monthly notices mailed out to the various officials whose work is associated with that of the State Board of Health. This does not include the correspondence in either Dr. Shore's or Dr. Ferrell's division of the health work.

The Bulletin, a thirty-two page pamphlet, has grown from an eight page pamphlet with a circulation of 3,000 addresses in 1909 to a mailing list of 11,500 for 1910, 20,000 in 1911, and 40,000 in 1912. This publication reaches ninety per cent. of the professional people, doctors, lawyers, and preachers of our State, and eighty per cent. of the public school teachers, State, county and city officials, besides a very large number of interested non-professional and non-official readers. The 40,000 families reached represent about 200,000 people, which means that the Bulletin reaches about one white family out of every seven or eight. Most of those present are familiar with the character of these publications, and to those who are not, I wish ot say that I have a supply of them here on the desk illustrating the material that the State Board of Health has for distribution for the sanitary enlightenment of all the people. In addition to the Bulletins the State Board of Health keeps in stock for distribution, to all who request them pamphlets on tuberculosis, typhoid fever, hygiene of infants, malarial, hookworm disease, quarantine and disinfection, sanitary privies, medical inspection of schools, protection of public water supplies, and State Health Laws. We will soon have stock pamphlets on vital statistics, flies, cancer, and residential sewage disposal plants. plants.

During the last eight months the Assistant Secretary, Mr. Warren H. Booker, has pushed a vigorous newspaper campaign along the lines of public health. A newspaper article of from two to five hundred words, occupying from one-third to a column of ordinary news-

paper space, plus a number of short, pithy paragraphs of from one hundred to ten words, making altogether an article of two columns, is sent out weekly to every newspaper in the State. This arrangement permits the newspaper to give the main article a conspicuous space and to use the shorter articles as "fillers." The editors understand that they are privileged to use the material as either editorial or contributed matter, either with or without credit to the State Board of Health. This arrangement of the newspaper material has been worked out with the advice and co-operation of the editors of the State.

Information obtained through a recent questionnaire mailed out to the editors of the papers of North Carolina shows the following facts: That the papers publishing this material have an average circulation of 245,000, and that altogether an amount of this health literature has been published in the last eight months that, if put in regular newspaper column form, would form a ribbon 161 miles in length, and if the amount of this material was computed in terms of the bulletin, our thirty-two page monthly publication, it would amount to an extra monthly edition of 40,000 copies of the Bulletin. That is to say, counting the newspaper work as Bulletin material, the Bulletin would reach 80,000 people. However, the newspaper material is short and fragmentary, whereas the Bulletin material is more comprehensive, and the newspaper material, therefore, would attract a different class of readers from the Bulletin material. In this connection, it is well to remember that the Bulletin costs the State considerably, whereas the newspaper material costs the State nothing save the patriotic devotion of the press of the State to the public welfare. As I have had very little to do with this newspaper work I feel that I can speak in commendation of it without putting any extra strain on the *vaso-motor* attachment of my facial artery. We have on file complimentary letters about the quality of this material from some of the best editors of the State, and I seriously doubt if there is any State in the United States that is doing as much sanitary educational work through the press as North Carolina. The interest of the editors of the State in the solution of the problem of public health, and their cordial co-operation in the dissemination of the knowledge of the means of preventing disease, is a matter for which we are not only deeply grateful, but to which the citizenship of this State is more obligated than they realize.

EXECUTIVE WORK.

The only phase of the executive work of the State Board of

Health to which I wish to call your attention is the new law in regard to the management of smallpox without quarantine. I think we may safely say that one year's test of the value of this method of handling the disease has forever killed the quarantine of smallpox in North Carolina. The public has had a sufficient demonstration to prove to them the wisdom of not assuming responsibilities that are in the strictest sense individual. There are now five States in the union that refuse to quarantine smallpox, North Carolina, Florida, Montana, South Carolina, and Minnesota. The last two, however, do have the authority to enforce compulsory vaccination in exposed communities, whereas the same authority rests with the counties in our State. A questionnaire sent out recently to the county superintendents of health was promptly filled out and returned by forty-two of these officials, and this questionnaire tabulated showed the following facts: That thirty-seven of the forty-two counties reporting do not quarantine the disease; that the management of smallpox with quarantine has averaged, during the five years *preceding* the enforcement of the no quarantine law, a cost to the State of $66,000 a year, and there were annually something like 7,500 cases in the State. The figures for last year indicate that the disease has cost the State $2,600, and that there were 4,200 cases in the State. The data, therefore, indicate that there was saved, to the counties of the State, $63,400 last year by the no quarantine regulation, and that the number of cases were decreased to the extent of 3,300.

The county superintendents of health answered the question as to the influence of no quarantine regulation on the population as follows: Two said it was bad; ten said it had no effect; twenty-five said it had a good effect, and many of the health officers were enthusiastic in its praise. The day when intelligent people of North Carolina waste their time and money to protect those who refuse to protect themselves and protest against the good intentions of their protectors has gone. Vaccination the *sole* prevention of smallpox is so recognized in the sanitary administration of this State.

ANNUAL REPORT TO THE NORTH CAROLINA STATE BOARD OF HEALTH.

JNO. A. FERRELL, M.D., *Assistant to North Carolina State Board of Health for Hookworm Disease.*

Mr. President and Gentlemen:

It affords me pleasure to report splendid progress for the past

year in the State Campaign against Hookworm Disease. The local co-operation received has been generous, definite and of a substantial character. County appropriations have been made in forty-one counties aggregating $9,450 for paying the local expenses (such as drugs, publicity work, traveling expenses of microscopists, etc.) of State and County Dispensaries for the free examination and treatment for the disease. The average duration of the county campaigns have been six weeks. This means that for six weeks of definite health work forty-one counties have appropriated more money than has been appropriated annually for salaries of county health officers in seventy-five counties.

The dispensary work has been completed in twenty-eight counties, is now in progress in five counties, and eight other counties are on the waiting list. 60,905 examinations have been made during the year and 42,231 people have been treated in the dispensaries (up to June 1st, 1912), and thus helped to healthier, happier and more useful lives. Up to date 1,276 doctors, a number much larger than the membership of the State Medical Society, have sent in signed reports of their experience with the disease. They have treated and reported 30,909 cases, which, with those treated in our dispensaries, aggregates 73,140 people treated up to date.

Until recently the dispensary work has been confined to the eastern section of the State. Six of the western counties have now made appropriations and already the dispensary work is progressing nicely in Wilkes and Catawba counties. We shall work in the mountain section chiefly until cold weather and bad roads render work in the east more practicable. In the early days of the dispensaries some of the examinations were based on clinical diagnoses, but during 1912 all treated cases were first found microscopically infected.

Other lines of educational work previously pursued are kept up as far as practicable. Especial attention is given to making inspection and sanitary surveys of the counties worked, so that progress in sanitation may be measured. You will recall from my last report that the infection survey is based on a microscopic examination of a minimum of 200 rural children ages 6 and 18 inclusive taken at random for each county. These surveys are now complete in thirty-five counties, and show from 15 to 75 per centage of infection. The sanitary survey, based on the inspection of a minimum of 100 rural privies, has been completed in fifty-four counties. The sanitary indices range from 1.5 up to 8.5 per cent. The tabulations of these surveys by counties and also the tabulations of the dispensary work

by counties is appended to this report and will be read if desired.

Our work with counties has been harmonious. No controversies have arisen in a single county, and our methods, work and results have met with heartiest sympathy and commendation.

The personnel of the physicians engaged has not changed except in the case of Dr. B. W. Page, who was selected as a whole-time health officer of Robeson, in which county he had previously conducted the dispensary work. He was replacted by Dr. G. F. Leonard, Chief Assistant for five years to Dr. Stiles in the U. S. P. H. and M. H. Service. Dr. T. E. Hughes entered the service last September as a State employed director. He, three microscopists, offic furnishings, rent, etc., has been paid out of the State fund. Contrary to our expectation we have thus far been unable to employ the second director as was anticipated out of the State funds. We trust, however, we may have this man and additional workers in the near future.

To note that the Annual Report of the Rockefeller Commission gives North Carolina a position heading every list of tabulated results accomplished in ten Southern States gives us occasion for pardonable pride. In the following achievements our State is well in the lead. In the number and percentage of doctors treating the disease; the number of people examined and treated by practicing physicians and in the free dispensaries; the number of county infection and sanitary surveys completed; the number of counties making appropriation for free dispensaries; the amount of money raised locally for co-operating with the Commission.

This does not mean that North Carolina has heavier infection than other States. On the contrary it is lighter here than in several States. It simply means that the best people in all the States have recognized the existence of the eradicatible disease and are lending themselves and their resources generously toward making North Carolina the first State to free itself from this important disease.

SANITARY SURVEY			INFECTION SURVEY		
County	Number Inspected	Sanitary Index	Number Examined	Number Infected	Percent. Infec'n
Beaufort	563	3.41	423	280	66
Bertie	355	6.21	1539	743	48
Bladen	135	3.92	257	131	50
Brunswick	336	2.53			
Buncombe	249	2.02			
Burke	365	2.5	426	252	59
Caldwell	670	3.62	337	214	63

Cartaret	150	5.86	1333	860	64
Catawba	198	2.87			
Chatham	103	5.63			
Chowan	256	4.76	544	220	40
Cleveland	359	2.76			
Columbus	785	5.45	263	232	88
Craven	363	4.3	1509	828	54
Cumberland	294	6.3	1537	775	50
Davidson	143	8.46			
Davie	111	6.12	225	39	17
Duplin	338	5.93	237	175	73
Edgecome	441	7.56	1149	421	38
Forsyth	157	7.7			
Gaston	117	3.17			
Gates	411	5.25	889	318	35
Greene	240	6.2	544	270	49
Guilford	208	8.56			
Halifax	721	6.73			
Harnett	119	4.4	763	362	47
Hertford	183	9.01	389	122	31
Iredell	265	5.16			
Johnston	411	6.74	394	138	35
Jones	206	3.88			
Lenoir	312	6.			
Lincoln	269	5.35			
Martin	504	5.09	1176	542	47
McDowell	456	3.42	287	206	71
Mitchell	597	2.59	210	110	52
Montgomery	329	5.8	248	52	20
Nash	187	6.04	1448	731	50
New Hanover	358	5.68	268	147	51
Northampton	357	6.5			
Onslow	473	4.84			
Pender	219	4.61	612	430	69
Pitt	260	6.	412	278	67
Randolph	283	6.78	254	45	17
Robeson	595	5.7	1411	722	51
Rowan	350	7.65	246	50	20
Rutherford	379	1.55			
Sampson	179	6.03	859	688	80
Stanly	107	5.42			

Wake	897	5.18	1115	534	47
Warren	444	7.63	399	163	40
Wayne	211	7.14	1943	1053	54
Wilkes	389	3.2			
Wilson	187	7.75	717	478	67
Yancey	433	2.16	557	175	31

DISPENSARY WORK UP TO JUNE 1, 1912.

County	Amt App.	Amt. Spent	Duration	Micro. Exams.	People Treated
Beaufort	$300	$248.57	8 weeks	4335	1196
Bertie	250	283.46	8 weeks	4069	1549
Bladen	200	138.20	5 weeks	257	1483
Brunswick	300	240.48	5 weeks	317	1670
Burke	250				*
Caldwell	200				*
Cartaret	150	150.00	4 weeks	2669	1194
Catawba	250				‡
Chowan	200	148.95	5 weeks	1575	487
Columbus	300	328.89	6 weeks	225	3920
Craven	300	191.13	8 weeks	2613	1142
Cumberland	300	208.72	6 weeks	1537	1839
Duplin	200			1154	680‡
Edgecombe	250	268.41	6 weeks	2535	639
Gaston	250				*
Gates	200	140.35	6 weeks	2034	499
Greene	200	140.40	6 weeks	1236	440
Halifax	200	248.28	4 weeks	1130	2179
Harnett	200	180.10	6 weeks	763	981
Hertford	200	148.10	4 weeks	1328	1262
Johnston	200	182.70	7 weeks	3865	1708
Jones	200				*
Lenoir	200				‡
Martin	200	200.00	6 weeks	2447	849
Nash	200	196.29	5 weeks	3308	1170
New Hanover	300	248.85	8 weeks	478	780
Northampton	200	154.10	4 weeks	1120	2197
Onslow	200	155.68	5 weeks	110	3164
Pender	200	176.94	6 weeks	509	1719
Person	200				*

Pitt	300	302.08	9 weeks	3911	2333
Richmond		250.00			*
Robeson	300	274.00	6 weeks	763	1973
Sampson	300	266.29	6 weeks	2220	2347
Surry	250				*
Vance	250				*
Wake	250	252.00	6 weeks	2632	795
Warren	200	138.80	4 weeks	732	862
Wayne	300	221.55	6 weeks	1318	824
Wilkes	250				‡
Wilson	250			722	350‡
	$9,700	$5,833.32	165	51,912	42,231

*On waiting list.

‡Work begun, but unfinished.

REPORT OF DIRECTOR OF STATE LABORATORY OF HYGIENE.

C. A. Shore, M.D., Director of the State Laboratory of Hygiene.

The following is a report of the work done during the year ending May 31, 1912. A total of 14,815 specimens were examined as follows:

		Positive.	Negative.
924	Sputum	268	656
547	Diphtheria	179	368
732	Widal	310	422
132	Malaria	4	128
48	Gonococci	27	21
199	Rabies	117	82
38	Pathology.		
92	Urine		
10	Blood counts.		
10	Gastric juice.		
5	Pus.		
16	Miscellaneous.		
9 581	Feces		6,498
	Hookworm	2,342	
	Ascaris	577	
	Trichocephalus	182	

Hymenolepis	112
Strongyloides	39
Oxyuris	9
Taenia saginata	2
Balantidium	1

2,489 Water.

These examinations are all made free of charge except the examinations of pathological tissues and gastric and urinary analyses. There is a general increase in everything except in the number of specimens of feces examined. As is well understood, this does not mean a decrease in the interest taken in and the efficiency of the campaign against hookworm disease. On the contrary, great progress has been made, but during the past year most of the specimens have been examined in the county dispensaries. I think it is but just to call attention to the assistance which the State Laboratory of Hygiene has consistently and gladly given to the Hookworm Commission and to its very efficient Secretary, Dr. Ferrell.

The increase of 569 samples of water means a very considerable increase in work. Each analysis of water involves numerous chemical processes and bacteriological tests, and represents in reality a very large amount of work. I believe that our water analyses far exceed in number those of any similar health laboratory in the country, and unfortunately many of these analyses are in themselves of little value. Contrary to a widely accepted belief, specific disease germs such as the B. typhosus never originate in water, and though water may convey them, they are very rarely isolated from it. An inspection of the local conditions should tell more about a private water supply than a laboratory examination can. The profession and the public should understand that the earth is an excellent filter and that underground water at a reasonable depth is almost always free from contamination. From this fact the conclusion must not be reached that the average well supplies good water. On the contrary, out of 549 samples of water examined in the past year from open-top bucket wells only 92 were clean and reasonably free from pollution. This pollution enters from the top either from surface water or from the handling of the bucket and chain. It is not difficult to get pure water, but it is difficult to keep it pure. The physician should be able to give practical advice about the private water supplies, recommending particularly the bored well and the hydraulic ram with a protected spring.

To my mind there is no more reason why the State should examine a private water supply free of charge than there is that it should examine a private milk supply. When, however, the water is sold to the public some control becomes necessary, and fortunately the laboratory analyses are of greater value. The source of the supply and the treatment of the water is known and the results can be interpreted intelligently. Our State has excellent laws controlling both municipal supplies ad bottled waters. There has been a very great improvement in the latter and it is due directly to the exposure of the sale of certain dirty waters.

	Good	Bad	Questionable	Total	Percent Good
Pump wells	295	142	38	475	63
Bucket wells	92	366	91	549	17
Springs, private	57	76	26	159	36
Cisterns	24	6	6	36	67
City supply	721	53	110	884	82
Mineral springs	181	12	7	200	90
Creek water and samples of uncertain source	85	54	25	164	52
Boiler water				8	
Sewage				14	
Total	1,455	709	303	2,489	

In addition to the analytical work, the State Laboratory of Hygiene has given the Pasteur antirabic virus to 195 patients during the year, each requiring a treatment of 21 days. (Several of these did not take complete treatment.) We believe that it is possible to devise a satisfactory method of distribution which will permit the patient to remain at home and to have the virus administered by his family physician, but this will require a considerable outlay. A much more satisfactory method would be to abolish the disease, and this is practicable and is the ultimate solution.

It remains for me to report on the distribution of diphtheria antitoxin. We are fortunate enough to be able to report a definite and tangible accomplishment. Under our old contract we could secure a low rate on antitoxin only when sold to the county or city, and then only when given to the indigent. In practice it was found to be impossible to get the health officers to keep the records, and the requisitions were considered, with some provocation, a mere matter of red tape. The result was that very little was accomplished in reducing

the price of diphtheria antitoxin. In August of last year we finally completed arrangements whereby we can distribute the antitoxin to any druggist or health officer at a very much reduced rate. The retail price is printed on each package and the distributor gets a net profit of 10 per cent. The retail prices secured are:

$0.50 for 1,000 units package.
1.35 for 3,000 units package.
1.95 for 5,000 units package.

The former corresponding prices were $2, $5, and $7.50. Before closing the contract we were informed by the United States Government laboratories at Washington that the antitoxin handled was of the standard strength. Up to June 1, 1912 we distributed—

1,264 1,000 units.
1,091 3,000 units.
1,218 5,000 units.

On this amount we were the means of saving to the consumer the sum of $12,638.00, which is more than twice as much as the annual appropriation to the laboratory.

Dr. Rankin: I would be very glad to hear Dr. Stiles discuss these reports, especially from the standpoint of hookworm disease.

Dr. Stiles: *Mr. President*: I want to congratulate Dr. Rankin on this report. I think that this series of statistics is one of the finest arguments I have yet heard in favor of the absolute necessity for a more perfect vital statistics law. I congratulate Dr. Rankin most sincerely upon this splendid piece of work.

In reference to the hookworm death-rate, as he estimates it, I would say that he puts it higher than I would. There are various ways of interpreting those statistics, and the conclusions that he has drawn has put the hookworm death rate higher than I had ever supposed it was in this country. If we take these statistics and carry out Dr Rankin's method of argument, we must recall that there are certain peculiar elements involved. In the first place he has compared a State in an area of the country where about one-third of the populaiton

is negroes, with an area of the country where the population of the country is composed chiefly of whites. Now we know that the negro is relatively immune to the effects of hookworm. Therefore there is a theoretical error involved which touches, approximately, one-third of his figures. His estimate is, naturally, about one-third higher than I would make it in the beginning. He has based his estimates on the urban and suburban population, rather than the rural, and that involves still another theoretical error. In interpreting these statistics we must hold these two points consistently in mind.

I would like to interpret certain of these statistics to show how the conclusion might be drawn that hookworm disease is really having a greater effect upon this population than it has. Let us interpret these figures, for instance, in the terms of tuberculosis. Here we have tuberculosis in the registration area of North Carolina as 28:2; in the registration area of the United States 160.3—an excess of 87.9, an excess of 54 per cent. Now Dr. Rankin shows that 93 per cent. of the deaths from tuberculosis occurred between five and fifty. Now let us admit for sake of argument that the excess death rate in that period is due to hookworm. The natural conclusion would be that the death rate in North Carolina from tuberculosis has been increased 24 per cent. I think that that would be an excessive increase of tuberculosis in the urban and semi-urban districts of the State. But let us go one step further. The difference between the death rate for the entire registration area of the United States and for the entire registration area of North Carolina is 2.1 per cent. Now, interpreting that in the terms of the actual increase, it would be 6.6 per cent. In other words, the increase in the death rate in the urban population has been 6.6 per cent. because of the hookworm disease. It is very difficult for me to assume that this entire percentage should be attributed to hookworm. I simply bring this out to show that Dr. Rankin has really

been over generous to the hookworm. I must say he has been tremendously fair to the hookworm work.

Dr. Rankin's work in this general line, in following out these figures, is a magnificent piece of brain work, and I think it shows more clearly than anything that has come up at this meeting, the absolute necessity for putting through a complete vital statistics law.

Dr. Spencer: I move, Mr. President, that these reports be adopted.

Dr. Ferrell: *Mr. President*: The briefness of my report did not permit my acknowledging the valuable assistance rendered to the work directed against hookworm disease by the Laboratory. All the microscopists have been trained under the supervision of Dr. Shore, and the specimen containers distributed to the physicians and to the field directors of the work. We feel under lasting obligations for the co-operation given in this way. To Dr. Rankin's office we are also indebted for a liberal supply of literature on hookworm disease, typhoid fever, malaria, tuberculosis and other subjects which have been broadcasted over the State. To these gentlemen and to the entire profession of the State we are profoundly grateful for the sympathy and co-operation that we have received.

Dr. McBrayer: I am very much interested in this death rate business and vital statistics. I want to find some scheme to explain away the death rate over at Asheville, and, if I understand Dr. Stiles, he attributes the increased death rate of tuberculosis in North Carolina above the average death rate, to hookworm?

Dr. Stiles: No sir.

Dr. McBrayer: I just wanted to ask him to explain that, and to know if hookworm is also due to our increased death rate from typhoid fever, etc.

Dr. Stiles: There are two very special elements involved

in the tuberculosis death rate here. First of all, the excess of tuberculosis deaths is in the negro population,—namely, that very population which shows a relative immunity to the more serious effects of hookworm disease. Secondly, we have a great many people coming from outside to North Carolina, to get rid of tuberculosis, and they die here, and increase the tuberculosis death rate accordingly. I find it difficult to admit the apparent conclusion of Dr. Rankin's figures, namely: that the death rate has increased 54 per cent. because of the hookworm. He has included that 54 per cent. death rate from tuberculosis in his general summary. Therefore I say he is more generous toward the hookworm than I should be; that the death rate from hookworm in North Carolina is really lower than his conclusions indicate.

Dr. Rankin: I realize the hour is getting late. I appreciate the nice things the gentlemen have said.

Now, gentlemen, examine the literature as you will and there is very little about the effect of hookworm disease on public life in contradistinction to individual life. We find no trouble in reaching conclusions as to the effect of this disease on the individual, but what is of vastly more importance to the health officer is what the effect of the disease is on public life. In arriving at conclusions as to the effect of the disease on public life, I think that we must recognize that this effect will be shown in the general death rates.

Dr. Ferrell calls attention to the fact that I have contrasted the death rate of this disease in North Carolina with the death rate of States where there is no hookworm disease. Of course I did. For comparative purposes how can I do otherwise?

He furthermore calls attention to the fact that conclusions as to the effect of the disease on death rates should not be based on the death rates of North Carolina alone. He would include statistics among the Phillipinos and Porto Ricans. In reply I wish to point out that hookworm disease is a disease

of barefooted people. People of North Carolina go barefooted for an average of ten or twelve years of their life, and then only during the Summer months. The people of the Philippines and of Porto Rico go barefooted their entire life and throughout the year. The exposure of the Philipinos and of the Porto Ricans therefore, and the degree of infection and the severity of the disease would be far greater than such etiologic conditions in North Carolina would produce. Again, as bad as sanitary conditions are in North Carolina, our people are deserving of a better classification than to be ranked with the uncleanliness of the Philipinos and the Porto Ricans. Moreover, the severity of this disease varies with the density of the population. The density of the population of the Philippines and of Porto Rico is much greater than the density of the population in North Carolina. We can not use the figures from the Philippines or Porto Rico in reaching conclusions as to the effect of hookworm disease on the public life of this State, because conditions are totally different.

Some one has said that there are liars, ———liars, and there are statistics; somebody else has said with a far greater degree of truth that liars may figure, but that figures do not lie. Now, the figures that I have quoted are a part of the official records of the State of North Carolina and on file and any man can get them and go over them and see that they are correct. These figures are facts and there is no way around them. I have gone to considerable trouble to see that they were accurate, realizing the importance of the subject under consideration.

I confess that I do not understand Dr. Stiles' mathematics. When we get his discussion, in writing, later, we will be able to see the methods by which he reaches his conclusions and can submit his method of figuring to the jury of public opinion. We contend that there is an estimated number of 14,-

000 deaths occurring in this State annually between 5 and 50 years of age. With 2.1 per cent. of those deaths due to hookworm disease, this death rate amounts to practically 280 deaths, and taking the severity of the disease as 2 1-2 times greater in the rural than in the urban population, the total excess deaths attributable to hookworm disease yearly in North Carolina would amount to something like 725.

Dr. Ferrell quotes me as having said that hookworm disease is one of the greatest diseases which has affected our country. I made this statement along with men like Drs. Stiles, Claude Smith, Harris, and other Southern investigators, when we first began to study the ravages of the disease in the South. We were all influenced with the enthusiasm of a great discovery. The new facts that started the swing of the pendulum of opinion caused it to go to an extreme, and it is only after the disease has been more thoroughly investigated and looked at from the angle of severity *as well as of frequency* that the pendulum of opinion regarding it has settled to a more steady and truer stroke. I confess to a change of opinion in regard to this disease. I am not so old that I cannot change my mind. I am glad to belong to a class of men that change their minds occasionally. In recent years I have been looking at this disease from the standpoint of vital statistics. My former enthusiastic attitude to the disease has changed to a more scientific attitude toward it. Nor am I alone in this position.

I wish to read a letter from Dr. Claude A. Smith in connection with this statement. The letter from Dr. Smith was written in response to an inquiry from me asking him his opinion in regard to the importance of the disease and is as follows:

(COPY)

Atlanta, Ga., June 12, 1912.

Dr. W. S. Rankin, Secretary,
North Carolina State Board of Health,
Raleigh, N. C.

Dear Dr. Rankin:—I am in receipt of your favor of the 11th instant and I am sending you under separate cover copies of reprints of articles on hookworm disease.

I have no specific article on the effect of the hookworm disease on public life in the South, but I would state that this has been misrepresented by some of the prominent writers of this disease. Unfortunately some who have taken a most prominent part in connection with the disease have done really very little toward thorough investigation. Necessarily their conclusions are often-times erroneous and, in fact, in many instances have been very slanderous of the people in the South. For instance the mortality statistics directly and indirectly due to hookworm disease are greatly exaggerated. It is true that the working capacity of a small per cent. of the enormous number of infected cases is greatly impaired, but the wholesale effect of the disease in its worst form has been misrepresented.

However, this exaggeration and misrepresentation has no doubt resulted in the establishment of the Hookworm Commission and the money back of it, and in this way some good has resulted. While I do not agree that the work of the Hookworm Commission is directly along the lines which will give the most rapid results toward the eradication of the disease, yet it is undoubtedly doing great good.

Regretting that I have no article more to the point and with kind regards, I am

Very truly yours,

(Signed) CLAUDE A. SMITH,
Director, Laboratory of Hygiene.

Dr. Ferrell: I would like to ask Dr. Rankin if the work of Dr. Smith, of Atlanta, that of Dr. Stiles, and that of Dr. Harris, was not done along about the same time. In fact, it was just a few months apart. Dr. Stiles had the priority of the matter, and he had the credit for discovering the American type of hookworm disease, and except in some of the work done by Dr. Smith, who is a very brilliant man, was done later, and he has received no special recognition by the commission or by the people for the work he has done; and I would like to ask Dr. Rankin if this man might not feel somewhat hurt over that thing.

Dr. Rankin: Such a thing is humanly possible, but that does not change facts. I do not care what Dr. Smith's motives are; whether you attribute to him jealousy or what not, facts are facts and they will remain facts when Dr. Smith is forgotten. The question at issue is the meaning of the figures that I have presented and not the motive of Dr. Smith or any one else for holding an opinion similar to my own.

Dr. Stiles asks me to call attention to the fact that he said in 1903 that this disease had been generally exaggerated.

Dr. Oscar McMullan: A few hookworms, in a way, are a good thing, like a few flees on a dog.

Motion by Dr. Spencer, seconded by Dr. Anderson, that the reports read be adopted and printed.

"A National Department of Health—The Provision of the Owen Bill," Dr. L. B. McBrayer, Health Officer, Asheville.

Dr. Laughinghouse: Being asked to discuss this question further reminds me of a circumstance which occured in a little town not long ago when a theatrical company was endeavoring to play Faust. The man who took regularly the part of Mephistopholes was suddenly taken sick and a fat man consented to take his place. The hole in the stage through which

Mephisto was supposed to descend into purgatory was so small that the fat man got stuck therein, whereupon a small boy in the audience hollowed out, "Lord God, Almighty—Hell's Full."

Dr. McBrayer has gone so thoroughly into the merits of this bill that there is but little left for me to say. The Bill as I see it, is nothing more or less than the voice of a tremendously powerful need, demanding of a country in no uncertain tone a greater recognition than it has heretofore received. It is asking that public health be given the place in National affairs that it deserves rather than attaching it in sections to the various departments of State as it now stands. In other words, it is demanding that public health be made a whole dog, rather than the last section of the tail of every other dog that goes to make up the kennel known as the National government.

The time is ripe for this change. Public Health in these United States must be made an entity. The time for the change is now. The method is by the adoption of the Owen Bill or something similar thereunto.

Public Health can not render the service that is it's due to humanity until it's policies and it's executive departments are controlled by men who know what sanatation is and how it should be practiced. The Owen Bill wants to place public health in a position where it can and will give more attention to human betterment than to the breeding of pigs.

I can not agree with Doctor McBrayer that the business interest in the country oppose a national department of public health. The time was then finance fought sanitation, but that day has passed. The changing of Panama from a quagmire of disease to a beautiful garden of productiveness, where man is safe, the abolishing of Yellow Fever from New Orleans and the West Indies; the eradication of Hookworm Disease; the checking of this and that epidemic—has come to be such common knowledge that both big business and little

business sees and knows that public health and sanitation makes opportunities for making money. So with the exception of the Patent Medicine business and other business that feast and fatten on infectious and contagious disease in man, I believe finance and material achievement will lend a hand to help rather than hinder any step that may be taken to organize and strengthen a National Department of Public Health.

So far as the Christian Scientists are concerned, we need not worry about them. Without knowing it they are being made the cats-paw to pull the chestnuts out of the fire for the Patent Medicine Venders. They suit a certain class of folks. You know there always has and always will be faddists, and the fact that there are faddists is prima-facia evidence that some folks believe in fads; "whatsoever thy faith, so be it unto thee." You have no doubt heard the story of an American in Paris who caught another American in that same city kissing and hugging and exceedingly ugly woman, whereupon the one American began chiding the other American for kissing a female so ancient and hard favored, the fellow that was being criticised took it in a meek and quiet way, giving as his excuse that he really was not kissing the woman for herself, but that he was a Christian Scientist, and therefore took this method of giving his dear little American sweetheart a bit of absent treatment. You just can't do anything for or against these Christian Scientists except let them alone. Neither can they, nor the American League for Medical Freedom, do much to hurt.

The Owen Bill or something like it is going to pass, because something has got to be done to make an entity of public health, something has got to be done in the way of organization; in the way of a fountain head, from which States, counties, townships, municipalities and communities can be placed in position to receive the modern, most economical, most efficient way as well as means to put sanitation into daily practice.

The question of a National Department of Public Health is too big, too vital and knowledge of its usefulness is now too generally known for either politics, faddists or business to successfully interfere.

"A National Department of Health—the Provision of the Owen Bill." Dr. L. B. McBrayer, Health Officer, Asheville.

Dr. Joseph Graham, Durham: These are suggestions which Dr. McBrayer will introduce in the form of a motion.

As to literature being sent out by the Department of Health —does that require a motion? I wish to second the motion made by Dr. McBrayer in his paper: that the resolutions as read by Dr. McBrayer be adopted as the sense of this body.

Dr. ———: *Mr. President*: I acknowledge that I could not catch enough Dr. McBrayer's ideas to make an intelligent speech on it, but it strikes me we are wading along in water rather deep for us, as a medical profession. I understand, from what we have learned here, that it is our business to act as guardians of public health, but I really do not see the importance of taking up a matter that is before the Congress of the United States, and passing resolutions relative to that. I think that we should we willing to wait, and when the matters have been straightened out by the law-making powers of the United States, we will avail ourselves of the laws that may come to us.

Dr. McMullan: I advocate what Dr. McBrayer has said. Two years ago we had this matter before our Society, and sent the matter to our Congressman of the United States, and I think it is in order for the Medical Society of North Carolina to go on record, and for that matter, I endorse what Dr. McBrayer has said.

Dr. Way: I desire, sir, to also offer my hearty second to the very excellent motion that Dr. McBrayer has made in regard to this matter. Of course everybody's business is nobody's business, and this is now the time and the place for

the organized medical profession of North Carolina to come out in its proper position and take a stand on this most important matter.

The suggestion has been made that it is already before the Congress of the United States. Why should we say anything about it? Because it is our Congress, and they are our servants, and we have a right to send up there and tell them what we think about it, and what we think they ought to do.

I have no disposition to prolong this discussion. It is a matter that has been before the thinking student of the medical profession for years past, and the time is ripe now, gentlemen, for the members of the Medical Society of this State to act.

I urge you, gentlemen, to adopt Dr. McBrayer's most excellent and happy motion.

Dr. Royster: *Mr. President*: Although I am not prepared in health work, I am still a doctor, and I am a member of the North Carolina Medical Society. I am going to counsel conservatism. I do not think that this matter should be touched at this time, and I will tell you why. I have just been in the House of Delegates of the A. M. A., not from my State, but elected from the section on Surgery. I have witnessed the scenes there in regard to the Owen Health Bill. They do not touch the bill at all.

Dr. McBrayer: Dr. Royster, are you speaking for Dr. Stiles?

Dr. Royster: I am not. I am not even speaking against the Owen Bill, but I am opposed to endorsing it at this time. There is a fight in the American Medical Association on this bill. Whether it is a fight in which worthy contestants are engaged, I do not know; but I do know there is a difference of opinion among the Trustees of that organization. Whether the fight is a fair and square one, I have no knowledge; but I know in the election of one of the Trustees to succeed himself there was tremendous pressure brought to bear on both

sides. I further believe that there is a provision in the Owen Bill which says that "This Act shall not apply to the restriction of any school of medicine in the United States." In other words, we may have in the provision of this Bill the filling of the positions in this department and bureau by homeopaths, osteopaths, and any other ilk of medicine. I know further that there is another bill pending before Congress, introduced by Senator Smoot, which attempts to arrive at the same conclusion as the Owen Bill, without this one objectionable feature. It may be that there are other objectionable features in it, and it may be that we do not want to accept anything from Utah, but I do believe, when legislation is pending, we should go slow. I do not see what good it will do to endorse the Bill. It has been said that the Senator will rush it through in the summer recess. I do not believe anything will be rushed through Congress this summer, in the present state of American politics.

I am not taking sides in regard to this Bill, but I do know there are rocks ahead on which we may run. It has come to my mind that the North Carolina Medical Society has already endorsed the Owen Bill, and that many of us have written to our Senators asking them to sign it. Petitions have been prepared by large numbers of persons, and I believe at this time this endorsement would endanger the passage of the bill.

As to my representing Dr. Stiles, I think it right that this Society should hear from Dr. Stiles and let him speak for himself.

Dr. Weaver: *Mr. President*: Is this a medical society or a legislative body? Is this question before us one of legislation, or is it purely scientific? I would like to hear the ruling of the chair.

The President: I understand, sir, that this body has the right to pass resolutions, and I do so rule—not legislaton.

"A National Department of Health—the Provision of the Owen Bill," Dr. L. B. McBrayer, Health Officer, Asheville.

Dr. Stiles: *Mr. President and Friends*: May I ask Dr. McBrayer to kindly hand me a copy of the Owen Bill which he was discussing? The Doctor has left out of this Bill one of the most important clauses, as reported to the United States Senate, namely a clause, the original intent of which I am told was to prevent the further appointment of any *commissioned* officers to the U. S. Public Health and Marine Hospital Service. Since that point was discovered, an amendment has been introduced, I will say in all fairness, taking away this objectionable feature of the bill.

If you pass a resolution endorsing that Bill, as reported to the Senate by the Committee, you pass a resolution endorsing a sentence cutting the throat of the Public Health and Marine Hospital Service of the United States—a clause to the effect "That nothing in this Bill shall be construed as altering the rank, pay or allowances of any officer of the Public Health and Marine Hospital Service, or of any other service, *commissioned at the passage* of this Bill."

When I saw that clause I asked the Secretary of the A. M. A. Committee if no more commissioned officers were to be appointed to the United States Hospital Service, and he said that was the original intent of that clause. That clause takes away our present system, taken in conjunction with existing law, of pension when an officer is injured in the line of duty. It takes away from our officers' widows our present chance of pension, if an officer is killed.

There are three public health bills at present, before the U. S. Senate, and Dr. McBrayer has presented to you only one of the three. I submit, not as an officer of the United States, but as a member of this State Medical Society, that if we endorse any one bill, we have a right to have all three bills before us, to judge of the differences in the provisions. Let me give you one or two of the points that come up for

consideration. One bill is known as the "Owen Bill," the second as the "Smoot Bill."

You have been talking about the importance of independence. What happens in the Owen Bill? It takes three officers now provided with cabinet representation, away from such representation, and practically makes the Secretary to the President the chief health officer of the United States. It puts the health service directly under the President. How much time has the President got to give to these matters? The Secretary to the President will practically be the chief health officer of the United States. In the next place it takes the storm center of the United States government today, which has to deal with matters involving 90 per cent. of honesty and 10 per cent. of public health, and saddles that upon the public health administration. That is not a wise proposition. The Smoot Bill, on the other hand, provides for the appointment of a Special Assistant Secretary of Public Health. Is not that better than a special chief of bureau? It leaves us with cabinet presentation. It leaves us where we have that important resource at our beck and call at any moment, in time of epidemic, namely, the Revenue Cutter Service. Give me the argument for taking us out of the Treasury Department at present. You forget, if we are fighting an epidemic on the seaboard, we must have a police force, and that police force is the Revenue Cutter Service. Today the services of that organization are at our command, at a moment's notice. You want to put us under the Secretary to the President, and remove us from our close ally, the Cutter Service. I say that is not practical governmental administration.

Do not misunderstand me, gentlemen. I am thoroughly in in favor of Federal Public Health Legislation. But I admit that we members of the service are in a difficult position when it comes to legislation.

A while ago I was asked in an adjoining State, to discuss this subject. I expressed approval of certain provisions of the Owen Bill, and a gentleman present said, "I am glad that a gentleman of the U. S. Marine Hospital Service at last is ready to get on the band wagon of the A. M. A." As I objected to certain provisions in the bill, another man said, "We never expect a man of the Marine Hospital Service to have any broad ideas on legislation." We are between the devil and the deep sea. I will not say which is the devil and which the sea.

We are not going to oppose the Owen Bill. I do not know a man in our service who is going before Congress to oppose the Owen Bill. Why? Because it does not need to be opposed. Congress will surely not pass a bill with the provisions of the Owen Bill as reported to the Senate. To support that bill at present means running one's head up against a brick wall, and we think too much of our heads. We are going to let matters take their course.

"A Department of Health."

Dr. Lewis: I listened to the above paper of Dr. McBrayer, and I entirely sympathize with the movement to secure, as soon as possible, the unified bureau of public health in the Department of Washington. There is no doubt, from what I have heard, that there is a very decided difference of opinion. I interviewed our Senators two years ago, and they are more in favor of it now than then. Now it has occurred to me, as there is a difference of opinion, and what we want to accomplish is not the Owen Bill, the Smoot Bill, or any other bill, but the establishment at our National Capital of a strong, unified public-health department; and it has occurred to me it would be the wiser course today to adopt a resolution of a general character, in which we express a desire for such a department, and leave it to the Senators to use their discretion as to the particular form it should take; and in order to bring the matter to a

focus, I move, as a substitute, the adoption of a resolution that the N. C. Medical Society, thoroughly believing the interests of public health of our country depends upon a strong, unified public health bureau at the National Capital, respectfully request our Senators and representatives in Congress to use their best judgment to secure the establishment of such a department at the earliest possible moment.

Dr. McBrayer: I desire to just say a few words, in answer to various things that have been said, for or against the substitution, as it may appear.

First, in regard to Dr. Royster's statement. I desire to say that there was an amendment and it is in the bill now, stating that the bill shall not militate against any school of medicine or system of healing. I do not see that that cuts any figure one way or the other. The present Marine Hospital Service, which is the public health service we now have, and of which we are proud, does not discriminate against anything of that sort. There are men in there who do not practice medicine of any kind. They are really not so much looking after the Hospital Service as they are looking after scientific men,—men of science, and it is known to all of you, perhaps, that Dr. Stiles, whom we all love and respect as a member of our Society, was not a member when he went into the Hospital Service, and is not now, perhaps, except through courtesy.

Now Dr. Stiles says it means the members of the Marine Hospital Service shall not have a pension, and that there shall be no more appointments. I know that Dr. Stiles is familiar with this bill, and for that reason I hesitate to differ with him, but I have read this bill carefully. I quoted the main portion of it in here, and for the life of me I cannot see that anything of that kind could be gotten out of the bill; but if it should be, that could be remedied. Everybody knows the people of this country are going to stand by the Marine Hospital and the men. He also said there were to be no more

appointments. I know he is a better scholar than I am. That is apparent, but how he can read that in the bill, I am unable to find out.

Then my good friend, Dr. Lewis, in a way, joins with Dr. Royster in "going slow," and says let's give a general endorsement. I have recounted to you not all, but a few of the organizations that have recommended this bill, and it is a matter of fact that the Committee of One Hundred Scientific men like Dr. Stiles, have gone over this carefully and discarded several bills that have been introduced before, and have lent their endorsement to this bill.

One other thing and I am done. I do not see that this can do any harm. Dr. Stiles says there is no possibility of its passing. It is a matter of health work, and doing it, as I see it, in a business-like manner.

Now I am not opposed to anything the Marine Hospital is doing, or anything it has in view; I am in favor of it, but I want to tell you this: that Senator Works, a Christian Scientist, has gotten up on the floor of the Senate and has opposed this bill. He has let into his speech a denouncement of the medical profession in every way possible, and espouses the cause of Christian Science, etc.,—and what happens? The eminent workers of the Marine Hospital Service were scattered over the earth. They opposed Patent Medicine venders all over the United States poured telegrams in to the Senator, endorsing his views and his cause by the tens of thousands, and sent thousands there, perhaps, to help in the work.

Now do we want to sit idle and say, "Perhaps this National League is right, after all, because they have sent up their telegrams of endorsement by the thousands, while the people of North Carolina go slow, and refuse their endorsement to Senator Owen?

Dr. Stewart: *Mr. President*: I move that a Committee be appointed to draw up something that is definite, endorsing the

national Secretaryship,—a cabinet representation. I think that need not interfere with anything at all. I move that a committee be appointed to draw up an endorsement with some sense to it.

Dr. Rankin: I would like to offer a resolution as a substitute for all of the matters that have been spoken of. I think this is one of the most important matters that has ever been brought before this Society, and we have a patriotic duty here to perform that is more weighty than our pleasure. I would prefer to stay here and fight this thing out during the next half hour, if necessary. I move that you call a special meeting of this Society at eight o'clock tonight, which is one-half hour before the regular order of business, for the special purpose of settling this matter then.

Dr. Weaver: I move that that be referred to the House of Delegates.

The President: I do not accept your amendment. We have too many things to be settled now.

Wednesday Night.

The President: The question before the House at this time is Dr. Lewis' substitution for Dr. McBrayer's resolution.

(See resolution.)

Dr. Lewis: *Mr. President and Gentlemen*: After the discussion this afternoon, I hardly think it necessary to say more, but I believe this the wise course of action. Of course a great many influences are at work, and many which we cannot understand at this distance, and I believe we would get better results by leaving this matter to the Senators and Representatives in Congress; hence I offer this resolution.

(Dr. Lewis' resolution substituted for Dr. McBrayer's.)

The President: Next order of business is the report of the Obituary Committee. I am sorry to say there is no mem-

ber of that Committee present, but we have some gentlemen here who have done most excellent work on that Committee, and they are prepared to report. I have constituted a temporary Obituary Committee of three gentlemen who are present: Doctors Bonner, Galloway and Hardy.

DR. BONNER: *Mr. Chairman*: The Obituary Committee begs leave to report as follows.

Obituary.

DR. WM. A. BLOUNT.

It is with much sadness and regret that we learn of the death of our highly esteemed brother and fellow-member of this Society, Dr. Wm. Augustus Blount, of Washington, which occurred on June 15th, of the year 1911, at the ripe and honored age of 72 years. That the community in which he lived and in which he so worthily and successfully practiced his profession, will greatly miss him goes without saying. No physician in this or any other country can practice the healing art for nearly half a century in any given community, without having endeared himself more or less to its people. Such a life is a large and valuable history within itself, writ in character and usefulness not only for its own community, but for the good of mankind in general. It is a hope and a beacon held out to the young men of our profession that are invaluable. Such a life is not only an honor and credit to the profession of medicine and to our Society in particular, but to humanity at large.

Dr. Wm. Augustus Blount came of old English lineage of distinction. He was a grandson of John Gray Blount, a grand old Revolutionary patriot, who was one of the founders of the City of Washington, North Carolina. John Gray Blount's

career and life are so bound up with the annals of the "Old North State," that no history of the same is complete without the full and honorable mention of his wise acts, distinguished courage, and patriotic valor. Dr. Blount was the son of Thos. Harvey Blount and Elizabeth Blount, who were fine types of manhood and womanhood, refinement and culture, courtesy and hospitality in the South's days of the gone-by. They founded a beautiful home, "The San Souci," located wtihin a mile of Washington. Here they were wont to dispense with generous hand, the good cheer and bounteous hospitality for which the South was noted in its palmiest days of town and plantation life. Here also was Dr. Wm. Augustus Blount born, and well born too, as his life and ministrations as a physician have fully exemplified.

Receiving a fair literary and general education under private tutors at home, and later, at Horner's Academy, which those early days well-grounded its students in the fundamentals of practical and liberal education, Dr. Blount, after a course of medical reading and study under the supervision of a leading physician of this town, entered the College of Physicians and Surgeons of New York City, from which he graduated with distinction just before the outbreak of the Civil War. On the commencement of hostilities, he entered the Confederate States' army as surgeon, in which capacity he served with "brilliance and distinction" from the beginning until the close of the war. To quote a well deserved eulogy upon his life—"His military service was conspicuous for devotion to duty, and unusual tenderness in the care of the sick and wounded. His ability as a surgeon received high commendation from his associates both in this State and in Virginia where he rendered skillful and timely aid on the battlefields, and under God, was enabled to prolong and save many valuable and precious lives."

On his return to his native city, Washington, in 1865, he

took up the pursuit of medicine as the junior physician with his co-laborers, Dr. John McDonald, and Dr. David T. Tayloe, the honored father of our present Dr. David T. Tayloe, Dr. Blount, in the course of time established a large and lucrative practice. In the Autumn of 1865, Dr. Blount married Miss Katherine Masters, daughter of the late Dr. Masters of New Bern. She and two children survive him—Dr. John G. Blount, a prominent physician who had been associated in practice with his father from his graduation until the latter's death—and a daughter, Mrs. Wm. Hyman Ellison. There are also left to mourn his loss, a brother, Major John G. Blount, and two sisters, Mrs. P. Hatton, and Mrs. Bonner Willard, and several grandchildren besides a large number of friends to revere his memory. He was a life-long member of St. Peter's Episcopal Church, of Washington, and for many years its senior warden. Faithful in all things, and lacking in none, he has passed from our midst, leaving a void in the home circle, in the profession, and this Society which can never be filled. May he rest in peace.

IRA M. HARDY, M.D.

DR. JAMES McKEE.

The subject of this sketch was born in Raleigh, N. C., on January 5th, 1844, and died on January 10th, 1912, at the State Hospital in the same city. He was the son of Dr. W. H. McKee—one of the State's most eminent physicians—and Susan Battle, a sister of the late Judge William H. Battle. His preliminary education was obtained at the old Lovejoy Academy, which was conducted by Mr. J. M. Lovejoy, a teacher of wide repute and justly celebrated throughout the State. Later on, he entered the University of North Carolina at Chapel Hill, but left there in 1861 to join the Confederate Army, enlisting in Company D, First Regiment of North Carolina Volunteers. He was mustered out in October, 1861,

but re-enlisted as Lieutenant in 1862. Until December of the latter year he served as drill-master in the Raleigh and Morganton camps of instruction, after which he went into active service. After the battle of Kinston, N. C.,—in which he participated—he was assigned to the Seventh North Carolina Regiment, then stationed near Petersburg, Virginia. In January, 1865, that regiment was ordered to North Carolina to intercept deserters, and Lieutenant McKee accompanied it on this duty. In April of the same year the regiment was recalled to the army. In the meantime Richmond had fallen and the Seventh was detained at Danville, Va., by order of President Davis and was the last regiment to leave Danville, following the train which carried Mr. Davis from Danville to Greensboro.

Lieut. McKee took an active part in the battles of Kinston, N. C., Jones' Farm, below Petersburg, and was on picket-duty around Petersburg during the three days' fight. Returning home from the army, he acted as special messenger for the National Express & Transportation Company for about a year and then entered the office of his father, Dr. W. H. McKee, under whose direction he began the study of medicine. He graduated from Bellevue Hospital Medical College in New York City March 1st, 1869, and began the practice of medicine in Raleigh in association with his father.

He soon won wide distinction in the profession and with the public, and quickly built up an extensive and successful practice. He was a member of the North Caolina State Medical Society and its Secretary for six years; a member of the Raleigh Academy of Medicine and at one time its President; and was one of the organizers of the Wake County Medical Society.

As an alderman of the City of Raleigh and a member of its Board of Health—whose President he was for many years—he organized and set in motion its system of collection and

registration of vital statistics and planned the organization of the city's Sanitary Department. He was also the first Superintendent of Health of Wake County and held that office for many years.

He was Dean of the Faculty of Leonard Medical School and Professor of Obstetrics and Gynaecology in that institution from the time of its inception until failing health induced him to retire from both positions; but he remained Emeritus Dean of said Faculty until his death, and he was the first North Carolina physician to begin the instruction of the negro in medical science. He was also Professor of Nervous and Mental Diseases in the Medical Department of the University of North Carolina. He was for years a surgeon of the Southern Railway and also a member of the Board of Trustees of Rex Hospital, which latter position he held to the close of his life. He was one of the early Presidents of the Capital Club, a leading social organization of Raleigh; and a handsome oil portrait of him now adorns its walls.

Twelve years ago he was elected Superintendent of the Central State Hospital for the Insane—succeeding the late Dr. George L. Kirby—and held that office until he died. (There were sixteen applicants for the position—a fact which made his election a great compliment to him.) With great zeal and untiring effort he devoted himself to the care and cure of the most pitifully helpless and dependent of God's afflicted children. During his administration and through his influence many improvements and additions to the equipment of the institution were made—among them the following: One new building for females accommodating one hundred additional patients and an addition to the male department sufficiently large to care for another hundred unfortunates; two colonies for epileptics, of three buildings each; one colony of three buildings for convalescing males; an ice plant; remodeling of a building for the residence of the Superintendent of

Epileptic Colonies; the purchase of the Grimes Farm, a tract of about 1300 acres adjoining the Hospital grounds whose worn out land has been redeemed and converted almost into a model farm.

It is said that, during one year of his administration, the State Hospital of which he was Superintendent had the greatest percentage of recoveries among its patients of any similar institution in the world.

In the Spring of 1911, the University of North Carolina conferred upon him the degree of Bachelor of Arts, thus recognizing his services to the State. (He had been a brave soldier when his country needed him at the front, and he fought the battles of life with as much courage and fidelity as he did those of war.)

His health was much impaired by prolonged and frequent sickness during the last two years of his life; but he bore it with a quiet and manly fortitude which deeply touched all those who were close to him. On the last day of his life he was up and about the room and at 10 p. m. was chatting cheerfully with a medical friend, recounting many amusing reminiscences of his medical student days and his life in the army. About midnight or a little while thereafter, his faithful wife's attention was attracted by his stertorous breathing and she thought for a moment he was only breathing heavily from being in an uncomfortable position. But it proved to be the fatal sleep of coma and the end was at hand in a few minutes more, without any physical or mental suffering whatever.

He was survived by his wife (who was formerly Miss Mildred Sasser) and six sons: Messrs. William H., John S., James, Edwin B., Louis M., and Philip S. McKee.

Dr. McKee stood among the foremost men of this community and was held in the highest esteem by everybody. Beloved, respected and admired by all who knew him well. he was, withal, the type of a Southern gentleman. Endowed by

nature with a genial, happy disposition and a keen sense of humor, he was a most delightful companion. His loving kindness and gentle ways, his simple, earnest and faithful life of service as a practicing physician endeared him to all his friends —and particularly to those who were his patients. He carried with him into the sick-room an atmosphere of hope and good cheer and his very presence and bearing there inspired his patient with confidence and the expectation of recovery—a state of mind which works mightily towards the end desired.

It was my good fortune to be frequently employed professionally by quite a number of his former patients after he retired from general practice; and everywhere I was glad to receive the influence of his strong personality remaining still with them all. Their loyalty of friendship for him, their abiding affection for, and confidence in, him as a man and their profound conviction of his skill as a physician—so universally exhibited wherever I have met them—constitute a touching tribute to his enduring worth and high character.

JULIAN EDWARD WOOD, M.D.

Dr. Julian Edward Wood, son of William Edward Wood and Sophia Martin Trotman, was born on May 3, 1844, in Currituck County, North Carolina. When quite young he entered Virginia Military Institute and participated in the battle of Newmarket, at which battle the cadets of that institution made their famous charge which has never been surpassed, if even equaled as a demonstration of bravery in the history of the world, and was one of the color bearers during that famous battle. Dr. Wood continued service with the Confederate Army from that time throughout the war, after which he returned to Virginia Military Institute from which place he graduated.

In the Fall of 1867, he entered the University of Virginia where he studied medicine, later completing his course at

Washington College, of Baltimore, which is now the College of Physicians and Surgeons, and graduated from the latter place with degree of M.D., in 1869. It was while Dr. Wood was a student at the University of Virginia that he and four other students of same institution were the original founders of Pi Kappa Alpha fraternity.

For over thirty years Dr. Wood practiced medicine and surgery in Elizabeth City, N. C., and held the confidence and admiration of the medical profession not only of the immediate section, but of the entire State. He was a member of Pasquotank County Medical Society, and Medical Society of State of North Carolina. He was county health officer of Pasquotank County for several years. For over thirty years he was Acting Assistant Surgeon of Elizabeth Health and Marine Hospital Service at port of Elizabeth City, N. C., also member of Board of Pensions. He was surgeon for Norfolk and Southern Railroad from its inception until a few months of his death, when, on account of failing health, he had to give up the practice of his profession.

Dr. Wood was particularly prominent in military affairs, having served with distinction and honor throughout the Civil War, though only a boy. He was the organizer of one of the first military companies organized after the Civil War, which was known as the Pasquotank Rifles, which company became famous in after years on account of its proficiency in military tactics. He was Colonel of the First N. C. Regiment, and was also Colonel of the First Division of the N. C. Naval Reserves, all of which organizations depended to a great extent upon the military training they obtained at the hands of Dr. Wood.

Dr. Wood was married to Miss Mary Scott on February 7, 1874, who survives him as do his two children, Miss May Wood of Elizabeth City, N. C., and Mr. William Edward Wood of Alaska.

Dr. Wood died at his home at Elizabeth City, N. C., in the early part of June 1911. To know Dr. Wood was to love him. He was one of the kindest of men and always ready and willing to help his fellowman.

He was a man of brilliant mind, with a good knowledge of the fundamentals of medicine; he was a good physician and surgeon and did a large practice for many years. With an unbounded charity he was at the call of rich and poor and won a place in the hearts of all the people.

JOHN EARLY LOGAN.

John Early Logan was born in Greensboro, North Carolina, July 14, 1835, and died March 31, 1912.

His father was John M. Logan, who was born near Londonderry, in County Londenderry, Ireland, in 1797, and came to the United States when he was 21 years of age and settled in Guilford County, N. C. He became prominent in military circles and held a commission as Major-General of North Carolina Militia.

In 1829 General Logan was married to Miss Elizabeth Ambler Strange, daughter of Robert Strange of Redford County, Virginia, and to them were born four children all of whom died in childhood except the subject of this sketch. John M. Logan was a son of Alexander Logan who was born in Ireland and was an officer in the British army. His father also was Alexander Logan and a native of Scotland.

General Leftwick of the Revolutionary army was a maternal great grand-father of Dr. Logan and Bishop Early, the emminent Virginia clergyman, was a great uncle. He was a descendant on both sides of men of ability and note and in his life and work Dr. Logan measured up to the high standard of his ancestors.

His earlier education was received at Caldwell Institute in

Greensboro under the tutelage of Dr. Alexander Wilson and also in the same institution after its removal to Hillsboro. He then entered the University of North Carolina where he distinguished himself, in a brilliant class and graduated in 1857. Immediately after his graduation at the University he began his medical studies and entered Jefferson Medical College, of Philadelphia. Here had been established a new standard of medical and hospital teaching by a Faculty such, perhaps, as the world had not known. These men at once recognized in John E. Logan a student worthy of them and their best efforts.

He graduated in 1859 and after a year's residence and study in the hospitals of Philadelphia he returned to his native town and entered upon his professional career. He was at once recognized as one of the foremost physicians of his section, but just as he began to ascend to fame, there came the call to defend his tSate and he enlisted in the Guilford Grays.

This was an independent company of volunteers organized in the County. Dr. Logan was elected its surgeon, and both he and the company did heroic and valiant service for the Confederacy to the end of the conflict.

In the Fall of 1861 he was assigned to the 14th North Carolina State troops as assistant surgeon, and in the closing year of the war was acting surgeon of the regiment.

After the surrender of General Lee at Appomattox he returned with the few surviving comrades and resumed the practice of his profession. He was still at the time of his death surgeon to the Guilford Camp of Confederate veterans.

In the year 1868 Dr. Logan performed the crowning act of his life, in his marriage to Miss Frances Mebane Sloan, daughter of Robert M. Sloan and Sarah Jane Paisley. Mrs. Logan's maternal grandfather was General Alexander Mebane, a member of the First Continental Congress. This marriage was all that marriage and married life could be. Through

almost a lifetime, forty-four years, it contained all that was happy and beautiful and true. Between these two there was almays a most beautiful and perfect devotion.

We often hear of "The Gentleman of the Old School." That school never enrolled the name of a finer gentleman than John Early Logan. The old South numbered not among its heroes a knightlier champion. The Old North State, with its proud record of fine citizenship and historic prestige, has seldom, if ever, borne a nobler man or a truer patriot. He was a brave soldier, a skillful surgeon, an accomplished physician. He was a friend, and above all, he was a *Doctor* not only of the old school but of the new. For more than thirty years he spent his strength to alleviate suffering wherever he found it. His simple presence was always a comfort and a benediction. On account of failing health he retired from active practice more than ten years ago, but his community still holds hundreds who remember that they always "felt better already" as soon as Dr. Logan entered the door. It is the simple truth, no physician could have been more universally esteemed. Gentle, kindly, discreet, clear headed, honest in thought and conviction, frank, firm and skilled he won the confidence of his patients and once won was always retained. Aside from his professional attainments he was a *man* among his fellow men in all movements looking toward the betterment of the community.

He was public spirited, broad minded, generous and in all his actions he considered the good of others as well as his own interests. In his intercourse with brother physicians he was always kind and considerate and helpful. He was above all vanity and pettiness and jealousy. None of these things ever came near him. He did not know what they were. He was clean of life, pure in thought, chaste in word, he commanded such deference as is accorded only to those who are unstained. He was a model man in all that a man may be

and the white flowers which he wore as he went to his last sleep was emblematic of his life. One who lived long ago, was esteemed fortunate because "he had sat at the feet of Gamaliel." *We* who have known him esteem ourselves fortunate because we have known Dr. Logan.

W. J. RICHARDSON, M.D.

Greensboro, N. C.

WILLIAM ALEXANDER GRAHAM, M.D.

Dr. William Alexander Graham was born in Hillsboro, N. C., April 18th, 1876, and died at his home in Durham, N. C., September 19, 1911. Dr. Graham was of distinguished ancestry, being a son of John W. and Rebecca Cameron Graham and grandson of William Alexander Graham, Legislator, Governor of the State, Senator of the United States and Confederate States and Secretary of the United States Navy. His maternal grandfather was Honorable Paul Cameron, a distinguished citizen of the State.

Academic education: schools of Hillsboro, Horner Military School and University of North Carolina receiving his A.B. degree from the last named institution in 1895. During his attendance at the University of North Carolina he was a member of the Zeta Psi Fraternity, the Gimghoul, member and manager of the baseball team.

His first year medical course was received at the University of North Carolina under Dr. R. H. Whitehead in 1895 and 1896, completing his medical education at the University of Pennsylvania, graduating with distinction in June 1899. While a student at the University of Pennsylvania he was a member of the Southern Club of the University, being active in aiding and supporting younger Southern students, was member and President of the Stille Medical Society. After graduation he served as resident physician in the Presbyterian

Hospital, receiving this appointment on competitive examination. In 1901 he was granted his license by the N. C. State Board of Medical Examiners at Durham, receiving the highest honors of his class. He at once joined the State Medical Society and was always an active and progressive member, contributing several papers, and was chairman of the Surgical Section of this Society in 1911.

At the time of his death Dr. Graham was President of the Durham County Medical Society, a member of the County Board of Health and member of the Medical Committee of Watts Hospital, Durham. He was a loyal member of St. Phillip's Church and contributed liberally to all worthy charities. In 1901 he was married to Miss Annie C. Shepard of Edenton, N. C., who with his two sons, William A. and John W., still survive him.

Dr. Graham was eminently successful in the practice of his profession being possessed of rare intellectual attainments, marked natural ability and skill, he inspired an abiding confidence in all those with whom he came in contact. He loved his work and gave to it his best effort, was gentle and sympathetic in the sick room and won the hearts and loyalty of his patients.

Among his professional brethren he was held in the highest esteem, being always ethical, free from petty jealousy and ever ready to render assistance to his less fortunate brother physicians.

In his private life he was genial and pleasant in manner, possessing high and noble instincts, faithful and honorable in all his dealings and established many and lasting friendships. In his untimely death this State has lost an honored son, the Medical Fraternity an able and worthy member and his family a devoted husband and father.

ROBERT L. FELTS, M.D.

Durham, N. C.

LATE DR. WILLIAM J. H. BELLAMY, EMINENT PHYSICIAN, ESTIMABLE CITIZEN.

Following a long and beautiful custom, it is meet and very proper that we should assemble upon an occasion like this, to do honor to the noble dead, an illustrious member of this Society, the late Dr. William J. H. Bellamy.

By your request and kind partiality, I am here to offer, as it were, a sprig of immortelle in eulogy of his memory.

"Leaves have their time to fall,
And flowers to wither at the north wind's breath,
And stars to set—but all,
Thou hast all seasons for thine own, O Death!"

"We know when moons shall wane,
When Summer birds from far shall cross the sea,
When Autumn's hue shall tinge the golden grain—
But who shall teach us when to look for thee?"

"Is it when Spring's first gale
Comes forth to whisper where the violets lie?
Is it when roses in our path grow pale?
They have one season—all now ours to die."

"Thou art where billows foam,
Thou art where music melts upon the air;
Thou art around us in our peaceful home;
And the world calls us forth—and thou art there."

"Leaves have their time to fall,
And flowers to wither at the north wind's breath,
And stars to set—but all,
Thou hast all seasons for thine own, O Death!"

Dr. Bellamy was born in Wilmington, earth's loveliest para-

dise, September the 16th, 1844. Full of good deeds, and after a lingering illness, he heard the rustle of angel wings in the stillness of the early morning hours of the 18th of last November, and entered into rest, until the glorious light of the resurrection shall gleam with splendor in the transmuted East.

Through his veins coursed the best blood of two commonwealths. His father, Dr. John D. Bellamy, a native of South Carolina, a wealthy planter, an educated, eminent physician, a polished, dignified, courtly gentleman of the old school, descended from sturdy Hugenot stock that settled between the confines of the Ashley and Cooper rivers, near Charleston, S. C., soon after the religious persecutions in France in 1685. Verplanch, the historian, says "the Hugenots were the most moral, industrious and intelligent part of the French people"

His mother, a prepossessing, attractive woman, of mental force and varied accomplishments, was Miss Eliza M. Harriss, a daughter of Dr. W. J. Harriss, who was a man of robust frame, a gifted physician and a leading citizen of Wilmington, whose life was cut short by some active disease before the age of 41.

He was closely related by blood to the well-known Harriss family, conspicuous there for many years, and the grandfather of Dr. Andrew Harriss, a prominent and popular physician, and the present President of the New Hanover Medical Society.

Dr. Bellamy, therefore, as you see, inherited much from his ancestors. I remember the first time I ever saw him. It was some 32 years ago, at a meeting of the State Medical Society, in the opera house of the queenly city near the sea, one glad roseate day in June. The night before, I sat in the dismal shadow of uneasiness, nursing a visibly palpitating heart, but sweet peace and infinite joy came in the morning, when my name appeared with others who had successfully run the gauntlet of the dreaded examniing board.

I had scarcely taken my seat as a rustic tyro in the midst of the brilliant luminaries of the Society, when a man in the prime of life arose, a few feet away, at the middle aisle of the parquette, and addressed the chair. Having been taught, after the manner of the Germans, to take in all possible at a glance, I rapidly surveyed the speaker from head to foot, and then began a more minute inspection. I was impressed by his pleasing manner and striking appearance. He was tall, erect, broad-shouldered, and was habited in a neat, stylish, light summer suit that fitted him to perfection. His massive, well-formed head was crowned with luxuriant, wavy flaxen hair; his forehead was high, broad, prominent; his brows were finely arched, under which were eyes, though kindly, that sparkled with the rich blue of the violet; his nose partook of the Roman type; he had a shapely, expressive mouth, about which a smile frequently played; and his paws and chin were indicative of firmness. Add to these a fair complexion, that never freckled, but only bronzed at the touch of the semi-tropic sun, and you have the picture. He was graceful in action, handsome as Apollo, and spoke with ease and fluency, in a well modulated voice that was clear, musical and penetrating.

Who is the gentleman addressing the meeting, I asked a friend at my elbow? Dr. Bellamy, he replied, of Wilmington.

Dr. Bellamy was well prepared at Mr. George Jewett's school, of Wilmington, for the State University, which he afterwards attended, being one of the brightest of the younger students at that great seat of learning. Jewett's school had more than a local habitation and a name. It was the synonym of discipline and thoroughness, and was justly celebrated in its home city and throughout the Cape Fear section. It was there that many of the captains of industry and prominent men, in the different walks of life in that community, found a sure way to success.

Fired by a patriotic zeal, in his 16th year, he left the University near the breaking out of the war, to join the Confederate army, volunteering as a private in Company I of the bloody 18th North Carolina Regiment. The regiment was early ordered to Virginia, where it immortalized itself in deeds of valor.

The gallant young soldier took part in a number of battles centering around Richmond, including the hot, desperate fight of Hanover Court House and the fierce and sanguinary conflicts, continuing from day to day, at Seven Pines. He also served at Pocotaligo, Cooshatchie and other points in the vicinity of Charleston, and was finally promoted to a captaincy of Brunswick County troops.

Immediately after the war he began the study of medicine under his father, and graduated at the University of New York at the head of a large class, winning the prize honor after a heated contest. He had a laudable ambition to succeed, and a healthy constitution and a retentive memory, with a virile, active brain, kept him to the forefront in the upward sweep of progressive medicine. He, however, was not content to rest upon his laurels in the wide avenues of the healing and surgical art, but being a lover of books, searched in inviting fields, and stored his mind with useful information from the best authors.

For some five and forty consecutive years he practiced medicine in his native town, with a diligence and vigor that won the admiration of all.

His ability, diagnostic skill, unflagging energy, promptness in the discharge of duty and a never-failing urbanity, coupled with a character for truth, sobriety and integrity, soon brought him troops of friends and patients. Few in his town, if any, did a larger practice than he, and none was more respected and beloved.

He was a good nurse, as well as a happily endowed doctor,

and in the sick room could be as gentle and sympathetic as Florence Nightengale, but also thoroughly courageous whenever courage was demanded. Alertness of mind and a sound judgment safely conducted him over difficulties that so often beset the pathway of the profession.

He was a pioneer in certain lines of microscopic research. After numerous tests he announced as early as 1890 that the fly was a carrier of disease. While a splendid all around physician, he shone pre-eminently in surgical obstetrics—above five thousand diseases being recorded upon his books in private practice.

With both the laity and medical men, his conduct was marked always by uprightness, patience, kindness and consideration; and, like the gracious preacher in Goldsmith's "Deserted Village," "E'en his failings leaned to virtue's side." He was in tuneful accord with Tennysons inspiring song:

> "A simple maiden in her flower
> Is worth a hundred coats of arms."

And to womanhood he was as deferential and courteous as the plumed knight in the grand old days when knighthood was at is best. While he was not moulded after the rugged, majestic, unique, pattern of Drumtochty's idol, so graphically and masterfully depicted in "Beside the Bonnie Brier Bush," he possessed largely his finer mental attributes; loyalty to duty, deep absorbing love of his work, acute insight into things, and a hearty readiness to respond to the call of the distressed. He did all he could for each man, woman and child who needed his services, year in and year out, in the cold and in the heat, in the sunshine and in the rain, in calm and in storm, by day and by night, with little rest and with but few holidays during his long and noteworthy practice. such a physician would have adorned the craft and been a bless-

ing to the people, in city or country, upon land or sea, anywhere, everywhere, wherever man has had a home upon earth.

There are but few now in the New Hanover Medical Society who recall the time when he joined it, it was so long ago. He was a valued actor in its activities, and filled most every office within its gift from the least to the greatest. He was also a member of the North Carolina Medical Society almost from the hour of his graduation up to the time he bade adieu to all earthly things. Numerous positions of the Society fell to him, including that of membership on the Board of Medical Examiners which he held for sixteen years.

While on the Board he was its efficient, painstaking Secretary, and also presided over the department of materia medica.

In 1893 he was a delegate to the International Medical Congress, at Washington, D. C., and last Summer his alma mater conferred upon him the degree of Bachelor of Arts. The James Walker Memorial Hospital, of his home city, was the munificent gift of Mr. James Wlaker, but its inspiration came alone through the fruitful brain of Dr. Bellamy, who was made a life governor of the institution by its founder, no other officer receiving that distinction. The training school for nurses at the hospital was likewise the happy suggestion of Dr. Bellamy, and he lent his time and energies to its establishment.

Rearing a considerable family, and burdened with the cares of a large and increasing patronage, Dr. Bellamy still found time, unlike the most of our fraternity, to look after his financial interests. He was esteemed by the banks, merchants, and those competent to judge, a prudent, sagacious, capable business man, and left a good estate. Had he given his days and nights to commercial enterprise, he would have attained to the highest measure of success in that department.

His whole life was clean, pure, unsullied, and if merit be the measure of character, his name will be written among the highest upon the scroll in the fair temple of virtue. I cannot subscribe to the sentiment of Gray in his sublime "Elegy" when he says:

> "The boast of hearaldy, the pomp of power,
> And all that beauty, all that wealth e'er gave,
> Await alike the inevitable hour,
> The paths of glory lead but to the grave."

Were that true, Abraham and Moses, Paul and the apostles, Caesar and Napoleon, Gladstone and Macauley, Washington and Lee, had not lived. Gray, himself, though dead, is a living refutation of his own assertion.

No, we are like a pebble cast into the middle of a placid lake, the impact of which starts a ripple upon its surface which widens and circles on and on until it reaches the distant shore, and then moves on again; so each one of our little, numberless deeds of kindness and of love, dropped into a community, permeates it from center to circumference, and then moves on until the flower is crushed in the broken vase, and then it goes on again, freighted with heavenly influences. So it will be with Dr. Bellamy.

With the artistic touch of a Raphael or Murillo, he fashioned his own statue in the sweet oasis, the flowery kingdom of his love, beautiful Wilmington, and a generous and chivalric people will keep his memory ever fresh and green; and when the last trumpet shall sound in clarion tones he will rise to live forever in the "sinless Summer land," panoplied with immortality and crowned with the amaranthine wreath of rejoicing.

W. C. Galloway.

In Memoriam.

WILLIAM JOSEPH JONES, M.D., CONSUMMATE PHYSICIAN AND SURGEON—BRILLIANT ORATOR—DELIGHTFUL CONVERSATIONALIST.

At Goldsboro, near the hour of midnight, on the 27th of June, 1909, surrounded by friends and loved ones, the mighty spirit of William Joseph Jones, M.D., triumphantly winged its flight from the island of time to the mainland of eternity; the end being as peaceful as a tiny babe quietly entering the mysterious realm of slumberland.

Dr. Jones first saw the light of day in the good old County of Greene, February the 28th, 1838; and the child grew and waxed strong in body and mind. His parents, Wylie and Winifred Jones, were natives of Greene, where they lived in rural felicity, and died there at the old homestead at an advanced age.

Wylie Jones was a man of commanding presence, fine common sense and great strength of character. He owned numerous slaves and was an extensive as well as a prosperous farmer. His wife,

> "Walked in beauty like the night,
> Of sunny climes and starry skies;
> And all that's best of dark and bright,
> Met in her aspect and her eyes."

She possessed many of the graces that adorn womanhood. By lineage she was a Miss Edmundson—there were no better people than her family in the County, and that means there were no better people anywhere; and in all the land were no women found so fair as the daughters of the Edmundsons.

The educational advantages of Dr. Jones were exceptionally good. Having begun the mastery of the treasuries of the famous blueback speller in an old field school near his father's

country residence, he did not despise the day of small things. He was a big, healthy, handsome, frolicsome, manly boy, who, while he delighted in the usual sports of the day, industriously applied himself to his books, and easily led his classes. Pope lisped in numbers and the numbers came; Dr. Jones lisped in language and language came bubbling up from the deep fountain within with the rippling, mellow cadences of Tennyson's Brook. With what facility he acquired information and words to impart it. If any was his equal, none surpassed him in that respect; and his memory seldom failed him. From the old field school he attended Franklin Institute for several years, assiduously presenting his studies, winning laurels each session, and standing high among his fellows.

In 1855 he was a student under the celebrated Dr. L. Jeffries, of Franklin County. Later, he entered the medical department of the University of Virginia; leaving there, he matriculated at the University of New York where he graduated with the highest honors.

Immediately after obtaining his degree, he by competitive examination, secured the position of resident physician at Bellevue Hospital which he held uninterruptedly for eighteen months.

Having garnered into the spacious storehouse of his fertile, colossal mind the rich, varied, absorbing lore of textbooks he rejoiced at an opportunity to test the theories at the bedside in a commodious, well-appointed, up-to-date hospital supplying abundant medical and surgical material.

Peradventure, no brighter student ever graced the classic halls of Bellevue, and after a year and a half of close application and strenuous labor, possibly no more thoroughly equipped young physician ever left her honored portals. It is said a prophet is not without honor save in his own country and in his own house. Not so with Dr. Jones. When he

reluctantly bade adieu to Bellevue, his objective point was Snow Hill, the County seat of Greene.

Upon his arrival there, he immediately and enthusiastically entered upon his life work.

Among his own people in the cozy little capital of his County—a veritable Auburn of the plains, situated only a few miles from the happy retreat of his childhood, fame and fortune alike awaited him. Scarcely a year had circled around his youthful, but magnificent head, ere his name became a household world all over the County; in the meantime, his practice had grown to proportions far beyond his most sanguine hopes. In an adjoining County a very capable confrere of his, who by the way was not on the best terms with him, was generous enough to voice the following just encomium:

"When Dr. Jones returned to Greene County fresh from the University of New York and Bellevue, he was the brightest young physician I ever saw." For twenty-five years, he lived at Snow Hill, the ideal physician of Greene, where big, brainy men grew, but his field of labor, in every direction, reached far beyond the narrow confines of his own country. His services as consulting physician increased in the same ratio that his general practice multiplied. Having years before purchased valuable property in Goldsboro, he moved there in 1884, and spent his vacation with his accustomed energy until a few weeks previous to his death.

He was a wonderful diagnostician. The only man I knew who equalled him in that particular was the great and knightly O'Hagan of sainted memory.

Dr. Jones' summary of a case was expeditious, accurate, masterful. At the bedside he could be a Chesterfield, and yet very firm, without giving offense. His command of language was marvelous; his voice rich, full, and sonorous; and he had a delightful way of impressing himself upon a patient in the

sick room, captivating at the same time the hearts of those in attendance. If he came a stranger, his ability, tact and rare motherwit soon gained for him the confidence and esteem of all; and he departed with everyone saying: "It was good to be here." In deed, at the bedside he was simply unrivalled; and he could surpass any woman rolling cornbread pills, making mustard plasters, or any kind of poultice; and he could perform cheerfully a thousand and one different, necessary little things with surpassing dexterity. Whenever he entered a household for the first time the presence of a great physician was unmistakably stamped upon the inmates, and after association intensified the high opinion formed. Never did a more impressive, resourceful physician visit the chamber of suffering, nor one who had a greater hold upon his patients. He appeared to possess almost mesmeric power over those he treated, yet he never practiced hypnotism a day in his life. It was the charming, magnetic personality of the man, reinforced by a superior intellectuality.

His achievements shone with the same brilliancy in the more exact field of surgery as in the common practice of medicine. He had a steady, nimble, skilled hand, possessed the knowledge, courage and training to perform any kind of surgery that fell to his lot, and whatever he undertook was done with care and dispatch.

Sims could not apply obstetrical forceps more admirably. He not only knew how to operate, but his experience and consummate judgment unerringly dictated when. If ones efficiency is judged by his success, he was eminently efficient. His energy and industry bordered on the phenominal. He could labor all day and night and be fresh the next day. Constant and arduous work frequently kept him up late at night, but upon the first peep of cool-eyed day, he was up and stirring. How often he hallowed to Chloe, the faithful old negro cook: "Hurry breakfast Chloe, I'm to be off at sunrise."

As I knew him he was a large, handsome, rather corpulent man, with a big brain teeming with gray matter of the first quality. At the age of thirty when he weighed about one hundred and ninety pounds, he must have rivalled Cæsar in comeliness, and Damosthenes scarcely excelled him in eloquence. Cathell, in his "Physician Himself," describes the poor under three heads: "The Lord's poor; the poor devils; and the devil's poor."

Dr. Jones was charitable to the first; kind and considerate toward the second; but he had little tolerance for the third—the fellows who were really able to pay, but whose conceptions of equity were so akin to "Uriah Heeps," they felt it their bounden duty to forego the pleasure of satisfying a debt. Being sincere and just himself, Dr. Jones could not countenance shams and counterfeits. His nice sense of discrimination enabled him instantly to tell the true from the false and kept him from being imposed upon; he, therefore, was known as an excellent collector. In times of danger he was alert and intrepid, but when all had been done that could be done, and the Angels were hovering nigh in a home of deep distress, his militant soul, would melt like as a tender woman's. Had Dr. Jones given his days and nights to the volumes of medicine and jealously "pressed on to the mark of the high calling" of his choice, untrammelled by other pursuits, no professional man of the State could have surpassed him, prolific as she has been in distinguished physicians. Being endowed with uncommon capacity, joined with extraordinary business sagacity, as he grew in years and accumulated, he began to invest in real estate, and became a large land owner, the management of which necessarily occupied much of his time. What an incomparable teacher he would have made in one of the big, reputable medical colleges of our country.

It is said of Sam Coleridge that he could hold a company

spellbound for hours by the enchantment of his conversational powers. Dr. Jones possessed that rare accomplishment in a superlative degree.

He was a member of the American Medical Association, the State Medical Society, the latter of which he joined at the early age of twenty-one; and he was also a worthy disciple of the Masonic fraternity. Having drunk deeply at the perennial fountain of Shakespeare, he was not unmindful of Walsey's advice to Cromwell, for he had outwearing ambition for office, civic or otherwise. In fact, he appeared to care very little about it. However, he was Superintendent of Health of Greene County for many years, surgeon of the North Carolina railroad, vice-president of the State Medical Society, orator at the Oxford Convention, served on many important committees, elected delegate to the different medical societies, and was a ready, lucid, forceful, brilliant speaker at all the meetings he attended. His aggressiveness and readiness in debate before the society, possibly led some to look upon him in the light of a mere politician—that is, a schemer or spoilsman. That idea, if entertained, was absolutely untrue, and I think I have a right to know, as I was intimately associated with him professionally for four years. He believed in politics, the higher science of government and civil polity, as all true men should. Certain it is, he never unfurled the fair banner of democracy in any campaign save in behalf of his country, his fireside, and his friends—never for himself. His countrymen tried to thrust political office after office upon him, but he declined them all, except that of coroner, it being largely in his line of endeavor.

Notwithstanding his indifference to holding office, when the "blast of war blew in the ears" of the democracy, without reward or the hope of it, he valiantly took the field and labored heroically for the cause he espoused. All the embellishments of the orator were his. In debate, he was a master in attack

as well as in the art of defense, and words rallied in appealing tones from his eloquent lips.

His baptism of Mr. King the astute politician and popular republican treasurer of Lenoir County, during a heated political debate in the court house of Greene, assisted by the talented Capt. William A. Darden, was one of the richest and most amusing performances ever enacted upon the hustings of our commonwealth.

The idea was a novel one; proved a decided hit, and brought down the house. He was a robust, virile specimen of the nervo-sanguinious type—all energy and action; wore a 7 1-4 hat, with a head as high as Byron's, whose brain weighed 53 ounces, though Byron only wore a boy's felt.

Dr. Jones moved quickly, thought rapidly, reasoned soundly, wrote a legible hand, was partical, fond of music, a fine actor, graceful writer, gifted orator, clear mathematician, had constructial ability, admired the beautiful, delved in good books, was polished in manners, and delighted in and gave delight to the educated, elegant and refined. He had no continuing city lure, but sought one to come; he, therefore, joined the Presbyterian church fifteen years previous to his death, and lived a consistent member therein.

Having built "more stately mansions" beyond life's rustless sea, when the summons came at the midnight hour, he was ready, and waiting, and with his "pilot face to face," he crossed the bar unafraid.

W. C. GALLOWAY.

DR. ———: As a member of the Durham County Medical Society. I think I speak the sentiments of that Society, that we are not willing that the death of Dr. Wm. A. Graham should be passed over with just a line that he died. I would like to ask, if it is in order, that the Society give us permission to have a committee from the Durham County Medical Society to write a word about Dr. Wm. A. Graham. He was the first of

all of us. He was the peer of any of us, and we wish his life to be kept green, and this notice to be printed in the Minutes of the North Carolina Medical Society.

Dr. Rankin: I move that permission be granted the Durham County Medical Society to prepare these minutes.

Motion carried.

Oration—"The Doctor," Dr. John Hill Tucker, Charlotte, N. C.

Annual Essay—"The Cancer Problem," Dr. Richard N.. Duffy, New Bern.

Adjournment taken to 9:30 Thursday morning.

Thursday Morning.

Dr. Munroe in the Chair.

"Ideals and Methods in State Medicine," Dr. W. S. Rankin, Raleigh.

Dr. Walton: Just a word of commendation in regard to Dr. Rankin's most excellent paper and also regarding the good work that he is doing for State Medicine, and as a native North Carolinian I am proud of Dr. Rankin's work.

I have never listened to two more instructive or able papers on State Medicine than the papers that have been read before this Society by Drs. Rankin and Ferrall.

I want to congratulate North Carolina on having two such men in charge of her Health Department.

It is claimed that there is not an adequately supported Health Department in this country and I hope that these two excellent officials will receive from the State proper recognition and support.

While State Medicine has done wonders in reducing the mortality from acute diseases there has practically been very little accomplished in the reduction of the mortality from

chronic disease. Statistics show that the decrease in the death rate under twenty is 17.9; from twenty to thirty is 11.8; from thirty to forty is 2.3. The increase in the death rate from forty to fifty is 13.2; from fifty to sixty is 29.2; and over sixty is 26.4.

Chronic disease kills half the people who die in the United States, or about 750,000 annually. Half of these—that is 375,000, would not die if the average health were as good as thirty years ago.

This enormous increase in the death rate has escaped the attention of sanitarians because of the notable decrease in deaths from acute diseases, so great as to more than equal the increase in deaths from chronic diseases.—*N. Y. Medical Journal.*

Can this increase in the death rate after the age of forty be due to the saving of so many lives in early life from preventable diseases that were formerly lost? If so, why has not the death rate in England and Wales increased above the age of forty?

Is there any reason why our statistics above the age of forty should not compare favorably with those of other countries?

I am gratified, but not surprised that my good friend, the Governor, is a strong advocate of State Medicine.

As the governor is a product of my old district, I always except to, and always find him on ths right side of everything.

"Ideals and Methods in State Medicine," Dr. W. S. Rankin, Raleigh.

Dr. Stiles: Mr. Chairman, this study of symptoms in cities is exceedingly interesting. Dr. Rankin naturally did not want to prolong his paper very much. Had he had time I think he would have put in a warning which would have prevented people not acquainted with public health work from drawing an erroneous interpretation from certain points which he

brought out. I take the liberty of pointing out this danger point to the minds of people not accustomed to arguing along these lines.

It would not be logical to conclude from the facts Dr. Rankin has presented to us that the public health officer should not work in favor of vaccination before smallpox begins, and I am sure that Dr. Rankin would want to avoid any possible interpretation of this kind.

It would not be logical that the public health officer should fail to argue for the improvement of the sanitary conditions of sewer and privies until an outbreak of typhoid fever occurs. The public health officer, such as Dr. Rankin, does not really need to wait for exact statistics in order to prophecy probabilities. A man of Dr. Rankin's experience can go into a town, walk around and say, "Here your conditions are so and so. The mathematical probabilities are that the diseases that will develop in your town will be of such a type."

I do not for one instant bring up this point in any way in criticism of this paper, which is a splendid effort. I simply bring it up to supplement a point which I am sure Dr. Rankin would not want to escape attention.

Sanitary foresight is one of the greatest qualities of the sanitary officer, and that sanitary foresight will show a city how to prevent the development of certain kinds of diseases the same as sanitary logic will show the health officer how to stop a death-rate which is already too high.

I do not wish what I have said to be construed as an argument against vital statistics. They are important; but sanitary foresight is as important as sanitary logic.

Dr. Bell: I think there is a point here that ought to be emphasized, which was brought out yesterday: That this work cannot be done by one man in any town. Every doctor has as much responsibility on his shoulders in the prevention of disease, and more, than the sanitary officer of that town. And if

these diseases are to be prevented,—the death-rates coming from these diseases are to be reduced,—it is incumbnt upon every physician to make a study of the social conditions of that town, as well as it is of the health officer, and to make suggestions and uphold the hands of the health officer in all his work.

"Ideals and Methods in State Medicine," Dr. W. S. Rankin, Raleigh.

Dr. Nisbet: I was very much interested in the point about lessening the mortality of people who have passed the ages of forty to forty-five; but all ages are highly important. When our State Board of Health has finished the propaganda in which they are endeavoring to eradicate infectious and parasitic diseases, I think there is another important line of campaign which can be set in motion, and that is to teach the people of our State something about dietetics—the nutrition value and preparation of food. In other words, learn people how to cook and eat. I think this is one of the greatest causes of diseases which come to middle and old age. Of course this involves not only the eating of food but getting pure food. Education along this line would lessen the death-rate of the population. We need to insist on this instruction in our schools, colleges and medical colleges. We must teach people how to eat and how to live by eating, and I hope that when these other problems have been settled, that some such campaign will be set in motion, and I feel sure will result in great good to the people of North Carolina.

"Ideals and Methods in State Medicine," Dr. W. S. Rankin, Raleigh.

Dr. Rankin closes: *Mr. President*: I appreciate the kind references which have been made to my paper.

The object of all Health Boards, of all Public Health Work, is to increase the diseases of old age. If you will look at the chart on the wall you will see that 27 per cent. of all deaths

occured under five, and 31.3 per cent. between five and fifty. We want to cut that death-rate down. We want to save the child from illo-colitis until it is from sixty to eighty years of age, and thereby make possible a case of arterio-sclerosis or chronic Brights. All of this talk about preventive medicine hurting the doctor's business is false. Every time a death under five or twenty-five is prevented a death over fifty or seventy is made possible. In the acute diseases of childhood and middle age the doctor attends his patient a week. In the chronic diseases of old age he attends his patient a year. For the acute diseases of youth and middle age he often treats financial dependents; in treating the chronic diseases of old age he treats a patient who has had much time to accumulate property with which to compensate his medical attendant.

I agree with Dr. Bell in the importance of teaching hygiene as well as sanitation. The sanitary conditions at present are so pressing in their demand for a reform as compared with unhygienic conditions that we shall have to face our greater foe first bad sanitation, then bad hygienic conditions, and finally go in for the last victory, the fight that treats the sick man before birth—the problem of eugenics.

In regard to Dr. Stiles' comment, he says that foresight in a health officer is a thing to be considered in giving an opinion as to the health of the community as well as the vital statistics of that community. I reply that the vital statistics will indicate the amount of foresight that was used in the community. We should let the world understand that a health officer is a man who has only one essential quality—the power to reduce death-rates or to maintain a low death-rate. That quality comprehends foresight.

To show the influence that facts have, I wish to report the following case. I was invited by a Woman's Club to visit a certain city in North Carolina and to give an address on Municipal Sanitation, and it was suggested that I make the

address apply to local conditions as much as possible. On driving over the city in the afternoon with my hostess we stopped at her husband's place of business. "What are you down here for?" asked her husband; "Don't you know that this is the healthiest place in North Carolina?" This man was one of the most influential men in that city. He stated that he had lived there twenty or thirty years and that he certainly knew more about the health of his town than I, a comparative stranger. I admitted to him all this should be true, but followed this admission with certain questions, to all of which he answered, "I do not know." My first question was, "How many people die here out of every thousand of your population a year?" I told him that the average death-rate of the country was 15 per one thousand, and that the death-rate of his town was 29.5 per thousand, and in the same way I showed him the special death-rates of his town as compared with the average death-rates in the United States. He ceased to think that he knew very much about the health of his town, and was willing to accept an opinion based upon uncontrovertible facts and to recognize the need of a sanitary administration in that particular city.

"The Medical Profession's Responsibility for the Use of Proprietary and Patent Medicines," Dr. Lucius N. Glenn, County Superintendent of Health Gaston County.

Dr. Jno. Hill Tucker, Charlotte: *Mr. President*: This is the first time I have had an opportunity of hearing Dr. Glenn's paper, and, realizing that the paper is a long one, I shall not prolong the discussion needlessly.

I simply arise to commend it. It strikes me that the profession's responsibility is a very grave one just now. To begin with, if we prescribe drugs of this character, we discourage writing prescriptions; secondly, it has a tendency to make our drug stores deteriorate. They are not going to have high priced pharmacists in a drug store with five cent soda water.

The thought that comes to me on this occasion is what occurred in Charlotte. They have one of the rooms in the Realty building, in which they are not going to sell any soda water, whiskey, or anything of that sort. It is purely a drug store. They are going to have a department in which such drugs as we are accustomed to prescribe are dispensed. I assure you that those gentlemen had my hearty co-operation in the beginning. It is as dangerous to prescribe a drug, without knowing what is in it, as it is to give a formula of milk for a child, without any knowledge of the stool whatsoever.

I commend the paper and I enjoyed it very much.

Dr. Glenn closes: *Mr. President*: The time is so short that I do not care to take up any more of the Society's time.

I thank you very much for the attention given me, and trust the paper may possibly have done some good.

"Eugenics and Conservation," Dr. F. R. Harris, Henderson.

Dr. Ben K. Hays, Oxford: To those of us who have listened with so much interest to this stirring paper it will come as no great surprise when I tell you that Dr. Harris' grandfather was a power in a camp meeting.

In the days to come, when the study of Eugenics has become as much a part of the medical curriculum as is anatomy, it will be remembered that the entering wedge to this study in the North Carolina Medical Society was made by Dr. Fletcher Harris of Henderson.

The interest in preventive medicine, heredity and eugenics has been most manifest in this meeting of this Society. For many years the medical profession has been interested in the study of preventive medicine, but heretofore preventive medicine has been understood to mean the prevention of infectious and contagious diseases. At this meeting we have for the first time turned our attention to the prevention of hereditary diseases. President Kent touched upon the subject in his address.

Mr. Lay, of the Blind Institute, touched upon it, and now Dr. Harris, in his most instructive paper, has opened wide the doors, and brought us face to face with a new science—a science of far-reaching import, worthy of the attention of all thinking men, and calling for the most careful research and painstaking investigation.

The very term "Eugenics" is new to most of us. What does it mean? It means race betterment. The stock breeder has taught us that he can improve the quality of his stock by breeding. The dog breeder has done the same thing; and we, as medical men have been called upon to consider the question—can we improve the human race by scientific breeding? This question constitutes the study of eugenics.

The question is a biologic or sociologic rather than a medical one. As medical men we have, in the past, given no attention to sociology and very little to biology. But if we are to study Eugenics, we must first give some time to a consideration of these branches. We should know as much of the nature of primeval man, his social, reproductive and other normal instincts as the cattle breeder or dog fancier knows of his pets.

Now, since my time is limited to five minutes, I can do no more than point out a line of study. Eugenics is based upon the study of heredity, and this presupposes some knowledge of organic evolution. We must go back to the days of Lamarck, whose epoch-making work was published in 1809, and learn his theory of evolution based upon "appetency." We must then take up the teachings of Darwin and consider the doctrine of "natural selection" based upon "the struggle for existence" and the "survival of the fittiest." We must study the question of "the transmission of acquired characteristics," a doctrine advocated by Darwin, and is, in reality, what is meant when we say "Darwinism." We must then turn to the writings of August Weisman, the great German biologist, who opposes the doctrine of "the transmission of acquired char-

acteristics." Then comes the study of Mendelianism, based upon the investigations of Johann Mendal, a Bohemian monk, who experimented with garden peas.

With this course of preliminary study we will then be ready to consider the study of Eugenics.

"Eugenics and Conversation," F. R. Harris, Henderson.

Dr. Paul V. Anderson, Richmond, Va.: Dr. Harris has given a most admirable and instructive paper. It is a well known fact that like begets like. When two feeble-minded persons marry, all of the offspring are feeble-minded. If a feeble-minded person and a normal minded person half the offspring are defective. It was well brought out recently at the meeting of the American Medical Association at Atlantic City that 75 per cent. of prostitutes are defective women. These women not only contaminate the youth of our land but they contaminate unborn generations. Such women should undoubtedly be segregated.

The institution which the State of North Carolina has established for feeble-minded is an immensely good thing for the State and it should have been established long ago. The government of the United States has spent millions of dollars for the protection of plants and for the protection of cattle, yet it has spent little or nothing for the protection of children who are the very basis of our civilization.

Every community has to support the feeble-minded of that community, and even from an economical basis it is far better to segregate them in an institution.

Doubtless some of you are familiar with the famous Jukes' case. The progeny of two defective sisters cost the community in which they lived a million dollars. Another thing which is of grave importance is the recognition of backward and defective children in school. Frequently the backward child is supposed to be defective. At times he is even thought to be imbecile. Whereas, if he were trained properly, if his physical

defects were corrected, he could take his proper place with his fellows. For instance, a boy or girl frequently stays in a grade year after year until finally he or she has to move on account of the fact that the seat has become too small. If these children could be taken in hand; if a special class could be organized for them they would frequently make useful citizens. Some of our most prominent public men have been dullards in youth.

North Carolina is beginning to have school inspection and this is one of the most important steps which could be taken for the conservation of the race. I have been convinced, too, that insanity is on the increase. There are certain cases of insanity—that is, cases of dementia præcox, which, if taken in time, could be saved. Frequently it is necessary to take such cases out of school entirely and to train them manually. It is far better to have one who could earn a living with his hands than to have a vegetating dement shut up within the walls of an insane hospital for life.

Every effort should be made towards the upbuilding of the race. Defectives should be segregated; the backward should be helped and everything should be done which should tend to make the best citizens physicially, mentally and morally.

Dr. ———: I think this is a subject in which we are all vitally interested. If the physicians would take this up, I am sure a purer and nobler race would result.

I remember a few weeks ago I was permitted to go through our Asylum, and I examined the blood of 200 cases for syphilis, and found among the males 50 per cent. were infected with this disease, and among the females 16 per cent. were infected; and it seems to me if we would take this up at this time, that the load in our State would be lighter, the asylums would not be so full, and the conditions would be very much better in regard to the development of our race.

I also came in contact with a number of young people who are infected with this disease,—not because it is their fault, but because it has been transmitted, and if this can be transmitted, if we would observe and examine our patients more closely, and not take their word as to whether they had had an infection of this kind, and give them the Nagouchee reaction, things probably would be different.

I am not prepared to give a very good report of this work, as I have only been in it about six months,—that is, the continuous reaction; but I think if we would investigate this work along this line, that greater progress would be made.

Dr. L. B. Morse, Hendersonville: My interest in this subject dates from some fifteen years ago, when, as a medical student, I, by accident, read a little work on prenatal influences. Of course we have all come to believe now that the old idea of prenatal influences are practically nil in having any influence upon the unborn child, but that which remained longest in my memory in that little book was the motto of it, which was that "every child has a right to be well born."

This subject, it seems to me, is one of the most important movements which has interested the world in recent years. It seems to me that it attempts in its aim to stop racial decadence, which, unquestionably, if we can believe statistics, is on the increase. It, to me, is a pathetic and a depressing fact that hereditary crime, insanity and imbecility are unquestionably on the increase. Of course we all know that crime among the negro, likewise insanity and syphilis has increased several thousand fold since the Civil War. The negro, prior to that time, was very much under control and it was not possible for him to degenerate.

This is a subject which strikes at the very best of the Caucasian race everywhere.

An article on the subject of fecundity from Harvard University, appearing a number of years ago, estimated that the good

old English stock in America, of which we are all so proud, was actually averaging less than two births per marriage. It takes over three births per marriage to perpetuate the race without increase. If the children were one male and one female, the births per marriage would perpetuate the race without increase, provided all married. Of course some persons never marry, and some die before the marriageable age.

There is so much to the subject presented, it is hard to know when to stop, but one point I would like to bring out. I would like to see this thought established as a sort of social law, namely, that it is a duty to society and to the State that the number of children born should equal the self perpetuating number. I have never heard any one else speak of it, but I believe that it is something that really ought to become a principle; it ought to be looked upon, if possible, as a marital obligation. I know that it is an obligation that will be looked upon as excessive and as altogether new, but I believe it to be sound.

Dr. Ferrell: *Mr. President and Gentlemen*: I desire to thank Dr. Harris for this excellent paper. It is the clearest and most forceful discussion of the subject I have heard. Too little attention is given to Eugenics. For my part I feel that hearing the reading of this paper alone would repay me for attending this meeting. I thank him very much and trust he may favor the Society in future meetings with other papers. He demonstrates wonderful ability in making the investigation and in the presentation of the subject.

Dr. Galloway, Wilmington: I want to say just a few words on the subject, but before I do, I would like to make a motion, if it has not already been done,—that Dr. Seale Harris, of Mobile, Alabama, who occupies the chair of Medicine at the University of Alabama, be extended the courtesy of the floor.

Motion carried.

You know I am a bashful young man, and it is not my province to say much on any subject, but Dr. Harris saw me this morning and asked me if I would not make some remarks upon his paper, so what I shall say will be entirely off-hand.

Under the head of "Eugenics" I did not know exactly what department he was going to take. I did not know whether he would discuss oil of cloves or the Princess Eugenia. (I believe the word comes from that source), and I was not aware until I heard his paper, what line of thought he would take.

I want to say, Mr. President, since I have heard the paper, that I desire to express to him my hearty appreciation for the admirable matter it contains. I think it is one of the very best papers that has been presented to this Society.

I desire to allude to one feature which has not been entirely brought out, and I feel sure that you will all readily understand it even better than I do. When I was a boy, taking the negro as a class, I remember it was a most unusual thing to find a case of consumption among them. I think, among the negro race, consumption was so rare that it was not even thought of; but you take the environment of the negro today; see his care, worry and hardships, and how he has to scuffle for a living, and that condition has brought about the results that have been spoken of here today. As I understand it, negroes have consumption more frequently than white people. I also understand the Eastern Asylum of North Carolina today is overcrowded. There scarcely would have been a case for an asylum fifty years ago.

That shows what should be done in the upward movement to make our people better, wiser and nobler.

We see these things around us in every day life. We can and should improve them. My humble judgment is, no really great man ever yet existed who did not have a great mother. You may search history, and I am persuaded it will bear me out in the statement. She might not have been educated, but

she possessed a fine mind and nobility of soul. It was so with Washington's mother, Macauly's mother, and it is true of all great men.

Dr. Charles Wardell Stiles, U. S. M. H. Service: Recently I was in Southern Texas and I heard of the most practical application of the subject of Eugenics of the human race that I have yet met with. This was being carried out in the State Woman's College in Texas, some several hundred miles distant. I learned of this plan from a young lady school teacher, and I went to Denison to look into the matter.

We can theorize just as much as we want to on the subject of Eugenics; it is a very difficult thing to reach a practical plan of putting that into operation. The Texas Woman's College has come closer to solving the problem by a certain plan than appears to be promised by any other proposition that I have yet seem advanced. There is a woman physician at this college, a whole chapter in herself. A woman of original ideas and a woman who understands girls. She gives at this college a course in so-called physiology. The last portion of this course is instruction in so-called home nursing. The course extends in all, if I recall correctly, over three years. The first year she takes up some ordinary anatomy and physiology; the second year she goes a little bit further, and the third year she comes to recognize the most important part of all,—namely, that our American prudery and American pseudo-gallantry to the women, whereby we keep our women in ignorance of the facts, lies at the bottom of much of the trouble in this country. Toward the latter half of the senior year of this course of home nursing, etc., Dr. Evans talks to the girls rather plainly. She gives them, first, notice that she is going to bring up some rather delicate subjects, and if they do not want to attend for the next two weeks, they are excused. She takes up sexology, menstruation, gestation, fertilization and childbirth. She has a manikin and carries out childbirth before the

class. She teaches the girls the necessity of cleaning out the eyes of the new-born child; she teaches them that any physician who fails to do that, is not practicing proper medicine, and should not be engaged as her family physician. She teaches them the cause of blindness, and then she goes into a brief review of the venereal diseases. Finally she says to those girls, "Now, young ladies, you may be in love; you may not be; but when you are picking out a husband remember this fundamental fact: You are not only picking out a husband, but you are picking out an ancestor. Now, before you marry a man, I do not care how much you are in love with him, you tell him, 'I will marry you on one condition: You go to a physician whom I shall name, and get that physician to assure me that you have no disease that will be transmitted to my children.'" Gentlemen, the girls of Texas are today carrying out that plan. The girls from Denton are going abroad through the Texas high schools and are teaching that principle to the Texas high school girls, and the girls there today are demanding certificates of the men, and I know of a case where a man was engaged to a girl and he could not deliver the goods. The engagement was broken.

I do not know how many years this course has been going on, but I do know that about twenty-nine graduates have given birth to children. That was last November. Up to that time there were about twenty-nine children born to girls who had taken this course. They were entitled to at least four deaths out of this twenty-nine. There has never been a single baby died of these twenty-nine. Now that is a practical application of Eugenics.

The question of Eugenics, gentlemen, does not seem to me to rest in very extensive State legislation. To my mind it rests in the hands of the women of the land. It depends upon their recalling that the men they marry are about to become ancestors. Now I am not saying that there should not be State

legislation on this subject. I believe there should be. I do not think it should be left to the girls to demand a certificate from the men they are to marry. I believe that there should be a question of State law, similar to the Indian law, and I concur with the doctor in this school on this one point. I do not believe that the certificate should be filled out by a physician whom the girl names, but that it should be filled out for this State by Dr. Rankin, as the Executive head of the State Board of Health. The State should shoulder the responsibility of certifying, by present day methods, the freedom from certain infectious diseases.

This whole subject of Eugenics is a tremedously deep one We go to bed at night and we do not know what is going to be discovered before morning. I do not pretend to be up on the literature of it, but I have reached this very important conclusion: that we have a national form of intoxication in this country, just as bad as any alcoholic drunkenness that has ever been known, and that is this psuedo-American modesty which prevents our telling the women why so many of them undergo the surgeon's knife, and which prevents our telling the women why so many of their children are blind.

Just one word in reference to the point my friend brought up here in regard to the obligations of childbirth. I am inclined to recognize his principles as theoretically correct, but practically open to this important objection. What does it mean to a woman to give birth to children? President Roosevelt has had a great deal to say on this subject, and so has Dr. Elliott of Harvard, but I submit that neither has given birth to a child. When one-fifth of the children of this country die before five years of age, I think the women are justified in saying to the men of this country, "We will not give birth to children until you learn to save the children after they are born."

Dr. Seale Harris, Mobile, Ala: I desire to thank the Asso-

ciation and Dr. Galloway for introducing the motion, for the privileges of the floor on this occasion, and also for the courtesies which have been shown me at this meeting.

I was on my return from the meeting of the American Medical Association, and decided to come by Hendersonville to know something of the workings of the North Carolina Medical Association, of which I have heard so much. The splendid paper of Dr. Harris, and the discussion on the subject of Eugenics alone, make the trip worth while.

This is a most important question that is being discussed everywhere in many different phases. The recent announcement of one of the Chicago ministers that he would decline to marry any persons who would not present a health certificate is, I think, a good step for bringing forth fit offspring.

The Southern Medical Association at Nashville two years ago, discussed the subject of Eugenics, and a paper read at that meeting by Dr. Cook of Nashville, is worthy of study. The Southern Medical Association placed itself on record at that time as favoring the Indiana law which has been in operation for a number of years, and I believe it would be practical for all of the States to adopt that law.

As the essayist pointed out, the important thing is to educate the people as to the sources of hereditary diseases and it should be begun in the early years of life. It is a question for the public schools, not only for the girls but for the boys. This educational work on Eugenics is being done in some private institutions, even in the high schools, but has not been generally adopted.

One important point not brought out: The effect of alcohol on the offspring. Now, gentlemen, I hope you do not think I am discussing the question of prohibition, because I am not, but recent investigations have shown very conclusively that alcohol is one of the great causes of degeneracy in our country. Alcohol should be studied from the unprejudiced scientific

viewpoint. It s effect on heredity is very pronounced. Recently my boy, ten years of age, called my attention to experiments made on dogs, showing that the dogs that had been fed on a small amount of alcohol daily, showed a much smaller proportion of normal offspring than the dogs that had not been fed on it.

As to the question of alcohol and its effects on insanity: Dr. Searcy says that 25 per cent of the insane in Alabama show insanity as directly or indirectly the result of alcohol. In New York Dr. Frederick Patterson says that 40 per cent. of the insanity in that State has been brought on from alcohol. If alcohol produces insanity, it will certainly cause defective offspring. It seems to me that the effect of alcohol on heredity is a very important point to consider in studying Eugenics.

Dr. Harris closes. Gentlemen, I just want to thank you for discussing my paper. I will say one more thing: I believe, gentlemen, that we ought to do one other thing that I did not mention in my paper: I do not believe any man ought to be allowed to marry in our State without a health certificate. (Applause.)

I thank you for discussing the paper.

Dr. Rankin: I have a request here from one of our Representatives in Congress, asking that this Society pass certain resolutions, which I will be glad to read for your consideration. On June 14th I wrote a letter calling their attention to the fact that the death from Pellagra was twice as large as from other States, and that I wanted to place the responsibility upon the Senators and Congressmen. This morning I have a telegram as follows:

Dr. W. S. Rankin, Hendersonville, N. C.

"John Faison suggests you have conjoint session pass resolutions regarding pellagra as basis for introducing legislation."

Warren H. Booker.

I would like to offer the following resolution:

WHEREAS, a National Conference on Pellagra will be held at Columbia, N. C., in October 1912. I move that a delegation of five members of the North Carolina Medical Society be appointed by the President of the Society to attend this Conference.

Resolution unanimously adopted.

DR. JOSEPH GRAHAM: The National Conference on Pellagra will be held in Columbia, and I hope, Mr. President, that as many members of this Society as possible, will go to Columbia to attend the meeting, which will be held there in October.

"Tuberculin Dosage—a Further Study of the Value of a Ratio Method of Dosage Increase," Dr. L. B. Morse, Hendersonville.

DR. ———: There is nothing more important than the proper dosage, and it has been suggested that there are so many preparations classed as tuberculins that it is quite important the proper dosage should be given. In fact, the tuberculins should be standardized as to strength of dosage.

There are two things to consider in the dosage of tuberculins. We may have tuberculins pure and simple, in which no proteins are supposed to exist—and usually none exist unless it is a product from slow growth, in which case the proteins are made of the culture media itself. Therefore a dosage of this might be necessarily quite different from what it should be if we have a pure tuberculin, an emulsion, a bouillon filtre or the like. They differ often, perhaps, in composition, including the elements that cause more or less reaction. And there is always some danger in active reactions; so there could not be too great caution in the use of tuberculins, beginning, as Dr. Morse has said, in moderate doses and climbing steadily, and then recording results.

I am very glad that the doctor is working along the lines to bring about a regular method of dosage, because the past practices have been a stumbling block in the general practice of medicine in the use of tuberculin. It is hard to be always safe in general tuberculin treatment, unless it is a case where an expert can control it himself, in an institution.

Dr. Morse closes: Mr. President, I have nothing more to say in regard to it. There is one point in which I cannot quite see the Doctor's attitude. I cannot see why it is not equally valuable in those types of tuberculin which are derived from the tubercle bacillus instead of beef broth. I cannot see why it would not be equally applicable there.

DEMENTIA PRÆCOX WITH SPECIAL REFERENCE TO THE PREDEMENTIA STAGE.

Dr. Paul V. Anderson, Richmond, Va.

Dementia Præcox is the name given to a group of cases which are characterized by a pronounced tendency to mental deterioration of varying degrees. Fortunately, however, dementia does not occur in all cases. The disease comprises from 14 to 30 per cent. of all admissions to insane hospitals. As the name indicates, the disease occurs in young people, more than six per cent. of the cases occurring before the twenty-fifth year. The average age of onset is from one to four years older in male than in female patients.

There are three forms of the disease: the hebephrenic, the catatonic, and the paranoid. The hebephrenic form is characterized by a gradual development of a simple, more or less profound mental deterioration, and the characteristic symptom is childish silliness and senseless laughter. Suitable treatment in the earliest stages usually produces some improvement in these cases, but about 75 per cent. of them show profound mental deterioration, and in only 8 per cent. the symptoms entirely disappear, and leave the patients in their normal condition. In some, who apparently recover, deterioration occurs later in life; in others, there seems to be a stunting of the mental development. Many a mental shipwreck resulting from dementia præcox whose academic education was interrupted by the psychosis has been unable to go on with his business or professional life, and has been compelled to care for a farm. The catatonic form of dementia præcox is characterized by stuporous states, with negativism, hypersuggestibility, uniform muscular tension, excited states, with stereotypy and impulsiveness, leading in most cases, with or without remissions, to

mental deterioration. Some of these cases remain in a stupor for as long as five years. In 27 per cent. the dementia is of light grade. About 13 per cent. of these patients seem to recover. In the paranoid form of the disease there are numerous and interchangeable delusions, both persecutory and expansive in nature, associated with a moderate degree of excitement and a rather rapidly developing dementia. The second class of these paranoid cases is characterized by fantastic delusions, usually accompanied by numerous hallucinations, which are more coherently developed and expressed for a number of years, when they either become incomprehensive or disappear altogether, leaving the patient in a moderate dementia. The outcome in these cases is always deterioration.

During the past five years we have paid especial attention to investigating the history of the past lives of our cases of dementia præcox. About 40 per cent. of insane patients seen by us have been cases of dementia præcox, and we have been especially impressed by the fact that, as children, many of them were not defective, but rather peculiar—different from other children, and did not have "healthy mental habits—habits which could have formed a sound, balancing influence in their conflicts." Some were unable to keep up with their classes at school, but a few of these backward at school had great mechanical skill and marked inventive genius. Some were abnormally bright. Many were seclusive, reticent, shy and excessively sensitive. They avoided games—especially rough school games. They did not have chums as do normal children. Many read a great deal, especially the Bible; were excessively religious—conscientious to a fault, and were dreamers. So satisfied were they with their dreams and good resolutions that they lost sight of the real and "developed an insiduous tendency to substitute for an efficient way of meeting difficulties a superficial moralizing and self-deception." Finally, their abnormal habits became so fixed that a life of action be-

came impossible and under a strain which would mean nothing to a normal individual, they broke down mentally. Dementia præcox, according to Dr. Adolph Meyer, is a deterioration of habits, and especially a deterioration of the instincts of action. This is indeed true, for these individuals dream of doing but are satisfied with dreaming, and they accomplish nothing.

If you will allow me to present a few histories of cases observed in the State Hospital at Morganton, North Carolina, and in Richmond, I can better illustrate the points I wish to make.

The first case occurs in a boy twenty years old whose maternal aunt was insane. He was always quiet; sober-minded; of good habits; was exceedingly bright in high school and entered college at seventeen. He failed to pass several of his first examinations at college, however, and did even worse with his final examinations; complained during the year of his eyes, but examination showed no ocular trouble; said he couldn't concentrate his mind and didn't feel well. He did not return to college the next year, but the following fall entered another college with his brother; remained only a short time and returned home suddenly; he realized that he was unable to do mental work. Soon he became badly upset and was committed to the hospital. He is now silly, simple, and rather markedly demented. Apparently the insanity had been developing for three years, as manifested by his inability to concentrate his thoughts; his indefinite feelings of discomfort, and his imaginary eye trouble. If these premonitory signs of mental breakdown had been recognized, and had the boy been taken out of school and given proper rest and care, the resulting insanity might have been averted.

M. A. was spoiled as a child and allowed to have her own way in everything. She was sensitive, and was suspicious of her teachers; would not play with her fellow school children

because she thought they imposed upon her, and, at times, she fought them. After puberty, which occured at thirteen, she became very seclusive and was moody. She did not confide in her girl friends because she thought they could not be trusted. The companionship of boys was avoided because they swore, and she feared that she would become contaminated by association with them. She could not learn well at school, and could not remember what she did learn. This failure to make progress distressed her and she worried over her spiritual condition because she thought she was not living right. She quit school because she thought her teacher treated her badly, and she brooded over this. In August, 1910, she had marked delusions of persecution; thought everyone was against her, and especially thought that her purity was doubted. Finally she became exceeding violent, obscene and pofane, and it was necessary to commit her to the hospital.

B. B. has always been seclusive, sensitive and timid; would not play with children; stayed in the house with her elders most of the time; learned exceedingly well at school and has always read a great deal. She didn't like the boys; in fact, she would leave the room when they came to her home. She has never taken any interest in dress, and has been excessively religious all her life. She has neved depended on herself, but has lookd to her sister to plan for her. She could sew quite well after her sister had planned and cut out a garment, but could not do this on her own account. After a while she quit going to church; became more and more seclusive, and, at times, refused to see even the members of her own family. In October, 1910, she became upset; thought that some one was exerting a bad influence over her and was trying to make her bad. She thought also that everyone was against her; that she was being poisoned, and she refused to eat and drink on this account. It was soon necessary to commit her.

L. J. was brought up on a farm, but worked irregularly.

He states that at school he could not get his lessons as well as the other children; was worried so much by the effort to prepare his lessons that he became discouraged and quit school. Quoting him: "I am easily bothered and worried and I am slow to think and slow to learn and easily forget things. When somebody is mad at me I cannot keep it out of my mind." Later he became markedly hypochrondriacal; suffered with many imaginary ailments, and worried greatly over these. He was quite a mechanical genius and invented a mail box which was patented, and for which he had several offers, but he did not accept them and nothing came of his patent. He worried much over this. In fact, he said, "I studied about this patent so much that at times I was right drunk." At times, he would have violent outbreaks of temper. Occasionally he would go away from home to work, but could not stick to any work for any length of time. The abnormal tendencies, uncontrolled, finally brought about a mental breakdown.

PROPHYLAXIS: The family physician knows better than anyone else the skeletons in the family closet—the hysterical, epileptic or insane members of the family, and he also knows the mental characteristics of the child, for he has known him from his birth. Frequently, fortified by this knowledge, if he has that greatest of all gifts—tact—he may, by properly safeguarding the child, prevent that most awful of afflictions, a mental breakdown. The children of neurotic parents and those with a bad mental heredity should especially have this care. Not only these children, but any child who shows a falling off in his school work should be examined and the cause of this failure, if possible, be ascertained. Frequently, as before stated, mental backwardness is due to adenoids, or to defective sight and hearing. Many a child's life has been made burdensome in school and his preparation for life's work seriously and permanently impaired by these defects which could have been so easily corrected.

Again, if the child is easily tired, irritable, nervous, seclusive, takes no interest in his studies and in the ordinary pursuits of childhood, it is best to take him out of school, for these are the symptoms which frequently lead to precocious dementia. An effort should be made to interest the child in manual work —to teach him to use his hands. A short mental rest might restore him; if it does not, he should not be pushed through school or college, but the family should be satisfied if he can become a wage earner with his hands. In my observation of dementia præcox cases, I am convinced that many have been ruined by pushing them through school or college who might possibly have been saved had the premonitory signs of a mental breakdown been recognized. I do not mean to say that all become insane who have the early symptoms formerly mentioned which so frequently lead to mental breakdown, but so many dementia præcox cases have shown these symptoms that their appearance should always be heeded and their danger recognized.

Puberty is the crucial time in the life of the child. At this time he is born again and every fibre of his being is pulsating with life and vigor. He dreams dreams and sees visions; is moody and broods; restraints are set aside; he is taciturn, introspective and self-sufficient; self-esteem and self-criticism are marked. This instability, occurring as it does, coincidentally with school life, is dangerous and the combined demands on the physical and mental strength are frequently so great that a mental breakdown occurs. All children at this period are on thin ice mentally, and the margin between sanity and insanity is perilously small. Normal children pass this danger period in safety, without help; but the mentally unstable succumb, especially if a helping hand is not extended, and end their days in an insane hospital, or, if they do not do this, they are able to take only a small part in the world's work. It is especially important at this time that the physician should come into the

child's life. The sexual mystery should be explained in order to prevent the vague surmisings—the doubts and fears so prevalent at this time. In speaking of dementia præcox, Dr. Adolph Meyer says, "Among the 25,000 persons who are today (1903) in the public and private institutions of New York alone, there are many brilliant hopes buried, largely owing to a lack of knowledge of what some people need in the way of social and personal hygiene. Remember that some of the most illustrious members of the race have been dangerously near the border line of insanity and seem to have been great, although they showed obvious traces of the same misled instincts that have completely wrecked others. Should not the home, the press, and the school mind some of these dangers, and shape their methods accordingly?" And should not the physician, realizing his responsibility, take his part in this great work—preventive mental hygiene?

In this connection it is especially important to investigate the backward child, for many of these children when they have found themselves and are properly taught become the greatest of men. Patrick Henry is said to have been such a boy. Goldsmith's teacher said that he was the dullest boy she ever taught. Webster was considered a dullard and Darwin was thought to be "a very ordinary boy and below the common standard in intellect." Of course, the defect in many backward children is permanent, but scientific pedagogy and medicine should give these children every opportunity before they are condemned. A careful physical examination should be made to find out any possible defects which would cause backwardness; then mental tests should be given to ascertain whether the defect is permanent or whether it can be overcome by proper teaching.

And now, in conclusion, let me say that children should first of all be made as nearly bodily perfect as possible, but, at the same time, the guiding and controlling of that body must

not be neglected. Introspection and brooding should be discouraged. Self-control and self-reliance should be taught, and especially should they be taught to do things rather than to think of doing things. The play instinct should be cultivated; games which require decision and action should be played. Let the children rub up against their fellows and thus bring our their defects and find out in what they excel, for this tends towards a democracy which is greatly to be desired. Not only does play develop children physically, but it develops them mentally, and it is a developer of character.

The child has been neglected in this age of commercialism, when every thought is bent towards the accumulation of money. Herbert Spencer has well expressed the condition when he says, "The raising of a first-rate bullock is an occupation on which men of education willingly devote much time, enquiry, and thought—the bringing up of fine human beings is an occupation tactily voted unworthy of their attention." This is short-sighted policy, for "if regeneration is ever to lift us to a higher plane, the adolescent ninus will be its main spring." Therefore, it beehoves us to make the child as nearly perfect as possible physicially, mentally and morally, for children are the nation's greatest asset and progress must come through them if it comes at all.

"Dementia Praecox, with Special Reference to the Pre-Dementia Stag," Dr. Paul V. Anderson, Richmond, Va.

Dr. Ira M. Hardy, Washington: I am very much pleased to have heard such an interesting paper as Dr. Anderson has just read. He has covered a great deal that was in my paper, as did Dr. Harris this morning. I thoroughly agree with both Dr. Anderson and Dr. Harris, and there are some points I want to bring out.

One in particular is that a close watch be kept over school children, and with the first sign of their falling off in their studies and school work an investigation should be begun by

the teacher to find out the cause. The teacher should report the matter to the superintendent, and the superintendent should, together with the physician, make a thorough investigation. They should decide between themselves whether the child should be sent to the school for the feeble-minded, to a hospital, or placed in a special class. In many instances the child would be saved that otherwise would be lost so far as recovery is concerned.

Now I mentioned special classes. I advocate that every graded school where there are as many as four or five hundred children attending the school should have a special class and the best teacher in the school placed in charge of it as it takes a person of good judgment and tact to get the best out of these children.

It requires a great deal of patience and unflagging interest on the part of the teacher to accomplish much, and too much must not be expected of this class. Take it along slowly. They should be taught such things as they can learn, like Sloyd, woodwork, basketry, or domestic science. These things do not require so much concentration of the mind as the ordinary study of arithmetic, English and history.

Another feature for the development of the feeble-minded child, the laggard, or the child put in the special class is teaching them to play. Some way must be devised to arouse him as some will not study, and when you find that they will not study make them play. They are taught by making them the best ball-players or the fastest runners. It would not be a bad plan to have a patch of ground laid off for gardening. Many a boy that is dull at school takes a great delight in his little plot of ground, his pig, sheep or goat. With the proper care, many a dull girl and boy will improve that could not be improved in the regular graded course.

Eugenics should be taught in all the colleges for young women. A beginning might even be made in the high school.

A lack of knowledge of these things do cause investigations by these alert boys and girls that prove to their detriment.

I, for one, sincerely thank these gentlemen for their papers, and as so much has been read and said along these lines with which my paper deals, Mr. President, I ask that my paper be read by title. I should like to read the paper, but as it is getting near the time for adjournment and election of officers, I feel every one is not as much interested in these subjects as I am. I thank you for your attention.

Dr. Joseph Graham: This is a very interesting paper of Dr. Anderson's. I am very sorry that he did not have a good attendance.

I desire to suggest, Mr. President, that the remainder of the program that may not be read, be referred to the Committee on Publication.

Motion carried.

Dr. Lewis Bell, Morganton: This is a very important question, and as Dr. Anderson has told us about the increase in insanity in the last few years, I think it is to be regretted that more of the physicians have not heard this paper, so as to take the steps of prevention, as well as the lines of other preventive medicine.

Dr.———: I suppose it is impossible for any of us to emphasize what a horrible thing a little demented child or young person is unless they have seen them or come close to them, and anything that holds out hope for their cure or help is one of the greatest things that we can do.

I want to emphasize the fact of starting off all children properly. It seems to me the whole duty of the parent lies in two things:—which practically are one—teaching the child self control and obedience. Of course, if they are obedient, they have to be self-controlled. I think that covers the whole ground. Still, when you get right down to the heart of the

parent, they want to bring the child up to be the President or something else; to be the best that they can possibly be; and we can abuse the father or mother for not teaching the child, but it seems to me we should teach the mothers how to train their children. Of course any mother who is nervous and hysterical, the child can learn that from the mother. We should teach them that this thing is contagious, and very often they have to be taken away from the parent. But if we would teach these parents the child would be brought up properly. The child should not be played with when a baby, like a little doll, or anything of that kind. Then if we impress on it another point, that health is more important than any edcuation they will ever get, and not be so ambitious about pushing them through school, the mental point will take care of itself much better. I do not think Dr. Anderson emphasized one thing: The kindergarten teaches a child through play and through handling of things trains them up through the moral and mental departments. Backward children could be gotten through school as well as the normally bright children.

It seems to me Dr. Anderson spoke along that line, and that those are the things that we should remember. And, as I said, it is so close to me that I am possibly more enthusiastic than the others. Eugenics is all right, but it is such a wide subject. This thing can be brought right down; if we train the mothers how to bring up these children, everything will be well.

The President: I feel that I cannot allow Dr. Anderson's paper to pass without an expression of my appreciation of it.

I regret that we did not have a full attendance to hear the paper. It is in accordance with my line of thought, that men who are informed on these subjects should instruct people what should be done for their protection. I trust that Dr. Anderson will come again with another paper on scientific

lines, and that he will have another opportunity before a larger audience.

Dr. Anderson closes: I want to thank the gentlemen for this discussion, and I do want to do this: to get the profession interested in this subject which is absolutely important. Those of us who have taught school and who have been doctors in insane asylums later on, and have seen those very boys come to that asylum later, can realize the importance of training. I believe that if I had known when I taught those boys, what I know now, that some of that crowd could have been saved. It is an important subject, and one that I am anxious for the physicians to know more and more about. It requires great and grave study, this point of dementia-præcox.

Dr. Joseph Graham: I desire to introduce the following motion:

Whereas, vital statistics from the only Southern State, where dependable vital statistics are available, show that the death rate of the disease, pellagra, has increased 52 per cent. within the last year, and that the disease has a death rate exactly twice the death rate of typhoid fever in the registration area of the United States, and ,

Whereas, all the Southern States are equally affected with this disease, and threatened with serious danger through its rapid increase, and,

Whereas, the cause of the disease and the appropriate means of preventing it are totally unknown, and,

Whereas, the absence of this life-saving knowledge makes it impossible for any particular State to protect itself from this ally of death of secret and insidous origin, and,

Whereas, all the Southern States being equally concerned in the suppression of this scourage, it would be economically burdensome and unfair for any *one* Southern State to undertake the solution of this problem, which is, until its means of prevention are discovered, an *inter*-State not an *intra*-State problem, a national rather than a State problem; and,

Whereas, the prunal and fundamental obligation and function of government is its vital interest first and material interest last, therefore,

Be It Resolved, by the North Carolina Medical Society, in this its Fifty-Ninth Session, that this Society do earnestly and urgently request, especially our own representatives and the representatives of all Southern States, in the Congress and Senate of the United States

Government to exert their full official influence to the end of securing an appropriation for the study of pellagra in the South by a Commission of experts to be selected as the good judgment of our representatives dictates, and further,

BE IT RESOLVED, that these provisions be carried into effect at the earliest possible convenience of our faithful, efficient representatives every interest in every problem that affects our Southrn life.

DR. NISBET: I also have a communication from Dr. Babcock, that he feels, this being a national conference, the territory around should show some active interest in it. He would like to have some representation from the North Carolina Society.

Dr. Graham's resolutions adopted, the delegation to be appointed later.

Adjournment taken until 2:30 p. m.

FEEBLE-MINDEDNESS FROM THE MEDICAL POINT OF VIEW.

Dr. Ira M. Hardy, Washington.

In considering the subject of feeble-mindedness from the medical point of view, I take it that it is better to bring to the aid of my modest efforts in this direction some of the leading medical and scientific authorities of the world upon this subject. I do not, for a moment, wish to assume the role of instructor to such a distinguished professional audience as this, but I come here simply as a post-graduate to learn and to be learned in the ways of the mysterious mind of man. Any personal opinions which I may offer toward the elucidation of the subject, are presented at their face value, but those in support of what I may state are probably well known to many of you, but not so familiar as they ought to be even to the most intelligent part of the lay public.

It is said that when a child comes into the world, though he already has all the primary convolutions, he has only one-third of the volume of his brain; he acquires the second third before 12 months are over, and the rest between that time and the 21st year. "By far the greatest growth of the brain occurs in the first two years of life. Development of the skull goes on from birth to the seventh year. About this time the cranium has gained full size, and there is almost a pause until the commencement of puberty, when a further period of increase begins, which goes on until the completion of the bones."

According to the most advanced medical and scientific authorities, in the fœtal brain are molecules and granules, amongst which appear short thread-like corpuscles, out of which are evolved oval colorless cells, and then nuclei are formed. "The cells go on to assume an angular or pyramidal form, and

throw out processes and branches. The axial nerves are formed later. The development of the cells does not proceed equally throughout the brain; nerve cells may be found in the sensory-motor regions, while in other parts there is nothing seen but the primitive threads. Pyramidal layers of the cortex appear earlier than the superficial ones. Nerve cells of the cortex are among the latest of the cell elements of the nervous system; those of the spinal cord are fully developed when the cells of the brain are beginning to appear."

Dr. W. W. Ireland, an English authority on the mental affections of children, observes that microscopists have assumed that the appearance of the medullary sheath is a proof that the nerve fibres are sufficiently formed to take on their function. "In the new-born child the main motor and sensory tracts of the spinal cord are already developed and the axis bands appear in vermiform process and the floculus of the cere-bellum, but the greater portion of the axis cylinders of the cerebrum are still naked." He states that the first complete axial fibres occur in the posterior roots of the spinal column and the back. These mature nerve fibres are held to transmit impressions of touch and of heat and cold, and from the first sensations of infancy, the foundation of its personality and point of departure of the motor impulses to the muscles. "In the medulla oblongata and spinal cord, the motor tracts are developed before the sensory ones, while in the brain the sensory tracts are developed before the motor ones. After sensory fibres of touch and bodily feeling, mature nerve fibres are observed in the olfactory tract about the end of the ninth month, running to the olfactory spheres in the base of the frontal and temporal regions of the brain."

The next to be developed are said to be the optic tracts. "About the second week after birth, bundles of mature nerve fibres can be traced from the retina to the basal ganglia, the corpus geneculatum externum and the corpus quadrigemanium

arteries, and thence to the visual area in the occipital lobe. In infants born before full time, the nerve fibres are not completely formed, consequently the faculty of vision is not yet in exercise. Last of all are the matured auditory tracts, as hearing is the last sense evolved in the child. Thus sensory tracts and sensory areas in the cortex are formed, while the remaining two-thirds of the brain are still in an immature state, destitute of fibres with medullary sheath." These areas cmprehend the Denk-organs according to Gleshsig, who says that a month after birth the *think organs* are still immature, and even in the third show poverty in myelin and so can readily be distinguished from these other areas. "These different sensory areas developing independently of one another are not adjacent, but a month after infantile life, innumerable association fibres stretch in both longitudinal and transverse directions, meeting one another in the whole brain, motor leading from median convolutions through the corona radiata and optic thalma. They have axis-band fibres during the first month of infantile life. These coming from the lower portion of the third frontal are later in development."

Dr. Vulpius studied fibres that horizontally traverse the surface of the hemispheres, and called them tangental fibres, which appear on the cortex in the fifth month of life. In the seventh month he states the tangental fibres are found in deep layers; while in layers between, the cross fibres only appear after a year. "In a child of eight, or perhaps seven, the fissures of the cortex and medullary substances are complete in number and calibre, and have taken the same arrangement as in the adult. It is during the development of the brain and nervous system before birth, and during the first year of growth, that malnutrition and perverted actions occur, which result in defective mental power."

Now, in the foregoing, I have endeavored to trace, with the assistance of the most advanced authorities, the mental struc-

ture of the child in embryo and after birth to almost the adolescent period. In this I have shown the structure and development of the brain in what may be called the normal child. Now let us turn to the consideration of the sub-normal child who should enlist our warmest sympathies, and above all, be entitled to our kindliest protection and tenderest care. However, before proceeding further in the consideration of the subject in hand, it may be well to give a definition to the term "feeble-minded." The words "idiot," "imbecile," "defective," "delinquent," "degenerate," and even "dement" in the initial stage, are all included under this comprehensive term. In fact *feeble-mindedness* includes everything from low grade idiocy to actual insanity. However, in medical parlance, according to its lexicographers, it has been usually defined in a general way as *idiocy,* of which there are a number of different classifications. Some more modern authorities, however, claim that the latter term, in its collective sense, has almost vanished form scientific reports, and that *feeble-mindedness* is taking its place. Be that as it may, I shall, for the purpose of this paper, use both terms separately and collectively, and especially feeble-mindedness in the sense that it implies any mental deficiency short of down-right insanity.

Eugenics, although a child of recent birth, has rapidly come to the fore and now is regarded as one of the advancing sciences whose study comprehends the entire character and scope of racial and individual improvement and betterment. As it relates to feeble-mindedness and idiocy, it informs us that we are in grave danger of believing that the "hereditary causes are all-sufficient and final in the accounting for the entire group of mental defectives." Such a view, while worthy of respectful consideration, is not altogether borne out by the investigations made and being made in this direction in both Europe and America. We almost know to a positive certainty now that at least 35 per cent. of the ordinary type of

feeble-mindedness is due to normal heredity, while it is said fully 65 per cent. of normal heredity obtains in low grade idiocy. It is a recognized fact in medicine that presence of "distinctive signs of disease in but 60 or 70 per cent. of all cases suffering from almost any disorder, makes the diagnosis of doubtful value, while in the field of causation of disease, even in a small group of absolutely negative findings as regards the particular cause, renders that specific cause not sufficiently determinative to speak of it as the *main* cause, much less the *sole* cause."

Fere says: "What favors the multiplication of neuropathic degeneracies is that neurotic persons of any kind have remarkable tendency to seek one another, and this pathological selection continues to swell the number." Ireland very truthfully remarks: "When one learns the anatomy of the heart, he is at no loss to understand how it acts as a pumping machine, but our knowledge of the structure and mechanism of the brain does not throw much light on its functions. Knowledge of the arteries, capillaries and veins makes the circulation of the blood clear. The structure of the eye-ball and the laws of light enable us to comprehend any change in visual apparatus. Knowledge of the anatomy of an organ takes us far into its physiology. Morphology and histology of the brain make us but little wiser as to how its structure is adapted for its completed functions. It is like a scroll which we cannot decipher. We know that it has a meaning, and that if the characters were altered or the lines transposed, the significance would be different, or there would be no significance at all."

Accrding to Dr. Clark, the arrest of brain development is the most striking change in the feeble-minded brain, the various residual inflammatory changes of the idiot brain often outrank the defects of development. He observes: "Either development defect paves the way to sequential inflammatory

changes, or *vice versa;* probably the former is the case. The various low grades of idiocy, as separated ordinarily from the higher types of the feeble-minded class, have many causations, such as inflammatory over-growth in the meningitic coverings of the brain, wasting away of the cell contents of the grey matter of the brain, hemorrhages, plugging of the blood vessels in the brain substance, cysts, softenings and hardenings of certain parts of the brain." Many idiotic children, he thinks, are simply born with mental defects, and therefore, cerebral defects upon which paralysis is later insiduously engrafted from some unknown cause. Many simple idiots are child paralytics, the child brain being very prone to develop encephalitis, which is one of the commonest causes of idiocy. He continues by stating that "many of the obscure and bizarre symptoms of idiocy, epilepsy, and palsies are to be explained by the seat, character, and extent of this peculiar form of encephalitis. The so-called paralytic brain is often seen in those showing simple idiocy or imbecility from birth. Are not the latter class entitled to be called *born paralytics* as regards all brain functions? The latter class shows that they gradually gain a paralysis of all functions at six or seven years of age, the period at which paralytics, as well as normal children, contract their mishaps most frequently."

Reprductions of malformations or deficiencies in brain or lungs are not less surprising than reproductions of trifling peculiarities in the integuments according to Ireland. "Women give birth to children who are insane before the brain could have been deranged by their own exertions. Children born from the disunion of parents conceived in antagonism can only be excessive in their tendecies or monsters in their organization. Fright to the mother or other painful emotions is often assigned as a cause of idiocy. In all ages women have believed that fright or extreme distress is dangerous to their unborn offspring, causing weakness, deformities or deafness.

It is also supposed that the anxiety and distress of the mother have the effect of increasing idiots amongst illegitimate children." Any way, there is greater mortality for illegitimate children and more of imbecility. The number of male idiots everywhere is greater than the female. The development of a male child is likely to be a greater trial upon the formative powers of the mother, and when these are inefficient, a breakdown in a complex organ is more likely to occur with the male than with the female infant.

According to another medical authority there are now some 15 types of idiocy classified on either distinct clinical or pathological grounds. "At autopsy the naked eye appearances of the brain are sufficient to enable us to classify the cases. In all cases of low grade idiocy there are definite and well-recognized changes in the autopsied brain fully explaining the previous mental state. These tissue alterations are most frequently the residue of old inflammatory changes which occurred in the early life of the individual subject."

Idiocy is generally regarded by the medical profession as a defective development of the cerebrum, due to lesions which attack one or the other parts of the nervous centers. While the general causes for epilepsy appear to be the same as those for idiocy, yet epilepsy seems to be propagated more directly than other neuropathic diseases. Ireland observes, for example, that "drunkenness in the parents is a very common cause. In fact, an excess of alcohol may originate the epilepsy or bring it back after the disease seems to be cured. Epilepsy is sometimes caused by injuries to the head or by cerebral tumors. We are not bound to suppose that morbific influence is always directed on the nervous system—dyscrasia may show itself in miscarriage or still-birth." Again it is said that hereditary predisposition is in most cases insufficient alone to cause idiocy, but requires other unfavorable influences to produce it. The neurotic tendency is accomplished by

various abnormalities of structure sometimes called stygmata, associated with deficiencies of the brain and nervous system.

According to an English authority on the mental diseases of children, "idiocy is mental deficiency or extreme stupidity, due to malnutrition of the nervous centres, either before birth or before the development of mentality in childhood. Imbecility denotes a less marked degree of mental incapacity, while feeble-mindedness denotes both idiots and imbeciles short of insanity. Dementia, on the other hand, begins with average intelligence, which gradually diminishes. Idiocy begins with a low amount of intelligence which gradually increases. Some dements have not lost the power of thinking, nor of concentrating attention, but abstain from mental exertion because it gives them pain. The idiot is generally soft, good natured, and confiding. The dement heavy and sullen."

Addison found in a congenial idiot the greatest quantity of phosphorus, and in the brains of two congenital idiots the least fat. Ireland says the same were also found in a case of dementia, and in one of melancholia. He observes: "The principal anomalies in the skull of an idiot are flatness of the head behind, rapid slope of the chons, an osseous rim around the foramen mangnum, a symmetrical size of the cavities on each side, irregularities in the wings of the sphenoid, and differences in the size and shape of the jugular and other foramina. Some idiots are slender and have the general appearance of having been poorly finished; but these abnormalities are not constant, and often the skull is irregular in both structure and capacity. In idiocy abnormalities in the form of encephalon, are often visible to the naked eye. The convolutions are coarse and simple, with a few secondary folds; the orgyri small, slender, and curling. Sometimes a few convolutions in the upper part of the frontal and parietal lobes are narrower than the rest, and alterations in amount and arrangement of the underlying white substance are observable. As

a rule, the thinner the cortex, the more complicated are the gyri." Thus a diminished amount of the white matter may influence the form and quantity of the grey matter of the brain.

Again, it is stated that the confluence of the fissure is sometimes a marked feature of the idiot's brain, the occipital lobe in some cases failing to cover the cerebellum. The latter is often in size and weight larger in ratio to the cerebrum. In the idiot cerebrum it is generally lighter, though in some cases it is beyond normal weight. There are asymmetries of the base of the brain, often accompanied by irregularities of the sphenoid and occipital bone—which are more of a proof of the disordered direction of the formative powers than an explanation of mental hebetude. In some there are profound idiocy, in others, a moderate degree of mental weakness. Of prime importance is the supply of warm arterial blood to the functions of the brain. Large volume of the circulating fluid is necessary to the brain, not solely for the purposes of nutrition or repair of waste. When repair is most actively going on, as during sleep, the supply is diminished. When the circulation of the blood is lessened, even by pressure on the carotids, the mental manifestations are suspended. "Thus the functions of the brain are dependent upon certain inter-action between the blood and the solid tissues. This view is said to be confirmed by the remarkable results obtained by the administration of the thyroid juice of animals in one form of idiocy in which the thyroid gland is wanting. Other malformations revealed by dissection are abnormal distribution of the blood vessels, unusual arrangement of the muscles, lobulated forms of the kidneys."

Few microcephales are of ordinary stature, and many of them are dwarfs. It is claimed that there are instances of two, three, and even four microcephales being born one after another to the same parents, nevertheless it is said to be the

rarest of all kinds of idiocy. Vogt believes microcephaly to be an instance of atavism, the appearance of a type of brain inherited from some very remote ancestral ape. Ireland claims that the brain of the microephalic idiot is the result of arrested development of a human brain checked in its evolutions at the simian stage. Gratiolet observes that microcephaly always precedes birth. It is thought probably that this state depends upon some cause, such as early takes place under some primordial generative weakness, forms are produced which differ from all normal states. "In the new-born child, in its normal condition the arrangement of the cerebral convolutions is complete in all its parts; if microcephaly occurred after birth, these convolutions would remain, and the volume of the brain alone would be diminished, but this is not so, the growth has languished from the beginning, its fold is shortened, and has stopped growing too soon."

Giacomini believes that the nerve centres especially of the spinal cord are influenced by the cause which has produced microphaly and at same period, and in same degree. Microthalma amongst microcephales evidently shows that the fœtus, at a given epoch, has been subjected to some vital trouble, which has involved the eye and the brain at the same time. Dr. Adrini observes: "It does not require a close examination to find the principal characteristics which distinguish the convolutions of man from those of the ape. In the brain of the microcephale we do not find the perpendicular fissure which divides the brain of the anthropoid ape into anterior and posteror parts. The inferior surface of the frontal lobe is flat, and the convolutions in their divisions, volume, contour, and disposition have the form of the human type. An examination of the brain strengthens the conclusion that microcephales do not represent a degeneration in the sense of retrogression to the organic type of certain apes, but rather an

arrest of development without aberration from the typical laws of organic formation through a pathological cause."

De. Reynolds remarks: "That the cause of mental failure in epilepsy is not identical with that which induces the attack is evident from the perfect intellectual integrity of some who suffer severely from the paroxysms, and also from the absence of all direct proportion between the degree of impairment and that of exalted motility. That its cause, however, is closely associated with that of the attacks, is to be inferred from the fact that the degree of failure does bear direct proportion to the frequency of the latter." Dr. Wildermuth states that "pathologists are in full contradiction about the state of the brain during the epileptic seizure. Some regard the irritation as arising from the cortex, others that it may be induced from peripheral irritation, or a lesion in the cortical matter stimulating the lower part of the brain, and the medulla to abnormal action." Hallager says that "the epileptic attacks are due to a sudden interruption of the cerebral circulation producing anaemia, probably through the action of the sympathetic on the capillaries." Ireland says: "We know that convulsions may be artificially induced in animals by rapid bleeding, on the other hand, an epileptic attack has often been stopped by compressing the carotid even on one side, which would only increase the anaemia of the brain. Then again fits are sometimes arrested by the inhalation of nitrate of amyl, which has been proved to cause the smaller vessels of the brain to dilate. Dubtless there is a disturbance of the cerebral circulation during the seizure, probably unequal. Then there is a gush of motor and trophic energy, throwing most of the muscles into violent contractions, even of the involuntary muscular fibres, and increased secretion of the glands, a derangement of the vital processes, which have their own modes of action, escaping the usual check of inertia and guidance of the will." Dr. Alexander Robertson, to whom medi-

cal science is indebted for many contributions, Dr. Fere, the distinguished specialist, Bevan Lewis, one of the most skillful of microscopists, Dr. Andriezen, a specialist of note, and a host of other names high up in the annals of medical science, have given their opinions and experiences, more or less at length, on the causes of idiocy, epilepsy, etc., as they relate to feeble-mindedness that confirm and add to the data which I have presented.

Sir W. James says: "Children, the subject of extreme rickets, are almost always deficient in mental capacity and power. They are not idiots; they show no sign of idiocy; they resemble rather children of low intellectual capacity and power much younger than themselves." Ireland observes: "Where epilepsy seems to be the cause of mental obtuseness, it can be regarded only as a complication, yet it is nevertheless one of the commonest causes of insanity as well as of idiocy, and in making the definition of the classes of it, it is difficult to know where to draw the line between epileptic idiocy and epileptic dementia. If the epilepsy has caused the faculties to become impaired before the age of seven, it would seem that the patients ought to be treated as epileptic idiots." Romberg, Reynolds, and others have shown that hereditary epilepsy manifests itself at an earlier age than non hereditary epilepsy; hence one may expect to find a neurotic tendency in the parents of epileptic idiots. In hereditary epilepsy there is an increasing liability in the descendants to have fits at an earlier age than their ancestor. "In 12 out of 25 cases, the fits showed themselves the first year, generally during teething."

The principal increase in the capacity of the skull, according to Virchow, takes place at the sutures, but there is proof that this is the only method by which it can increase. "The skull, like other bones, undoubtedly, by deposit on the one side and absorption on the other, can increase, just as the

medullary canal is found in long bones, or the neural arch widens in the vertebrae. The different pieces which enclose the spinal cord are certainly formed into one bone from the third to fifth year, but after this the cavity is increased by the simple process of absorption on the one side and deposition on the other." Ireland says the skull does not limit the brain, nor does the brain extend or distend the skull; but both grow harmoniously together under the influence of the formative force inherent in the whole organism which fits the size of the skull to the size of the brain, as it moulds the limbs of either side to the same bulk and shape. It is possible, however, that in disease this symmetrical working may be deranged; the brain may increase too rapidly for the skull, or the closure of one suture may compel the brain to grow in another direction; but one is no more bound to believe that microcephaly is caused by the early closure of the sutures, than that the hydrocephalus of hypertrophy of the brain is caused by ossification."

The relation of size of brain to mental power is a puzzling question in physiology. In heavy brains, probably the weight of normal nerve tissues is increased by adventitious deposits. Ireland says: "The weight of the two spheres is frequently unequal, especially in epileptic insanity and in general paralysis." Some authorities hold that the power of thought depends on the fineness and degree of the complexity of the convolutions, or their symmetry on each hemisphere; others to the total amount of grey matter separated from the large mass of white matter. The brain is but one factor. The quality of the blood which circulates through every part of the nervous tissue, the quickness of the circulation, the method of distribution of the blood vessels, and the assimilated power existing between the nourishing fluids and the nervous matter—all go to make the sum mount, and a deficiency in any of them may cause the harmony to jar.

The average size of the heads of idiots, excluding hydrocephalic ones, is somewhat smaller than the average size of those of healthy people; however, there are exceptions to this. Idiots who have larger heads do not surpass in intelligence those who have smaller ones. According to Ireland, size of head, save in cases of hydrocephalic and microcephalic idiots, gives no estimate of comparative intelligence of chilren. Felix Voisin observes: "The proper exercise of the intellectual faculties is impossible with a head from 11 to 13 inches in circumference, and a measurement of 8 to 9 inches from the root of the nose to the posterior border of the occipital bone. To this rule there never has been an exception. Heads from 14 to 17 inches in circumference, and from 11 to 12 inches comprised between the root of the nose and the foramen magnum, are too small for ordinary intelligence; but heads from 18 to 18½ inches in circumference, though small heads, allow all of the regular exercise of mental faculties."

"Below 17 inches in circumference," Ireland says, "the manifestation of mental power would be feeble." But heads of this small scale are even seen among idiots, for idiocy is generally the result of disease, not of the smallness of the brain. "The name of microcephalic should be given to all heads below 17 iches equals 431 millimetres in circumference." Broca calls microcephalic every cranium which has not been artificially deformed, and whose antero-posterior diameter is less than 149 millimetres, equal 5 inches 9 lines; to heads larger than this, but still of small size, he gives the term demi-cephalic without fixing the limit of normal capacity, but he gives below 1,049 grammes for males, and 907 grammes for females, as the limit of weight. Topinard gives a horizontal circumference of 349 millimetres, equal 13 inches 7 lines to the microcephale and to the semi-microcephale, as much as from 432-17 inches to 480 millimetres, equal 18 inches 10 lines. Ireland says it may be well to hold in mind that the average

brain weight in man ranges from 40 to 52½ ounces equal from 1135 to 1436, and women from 35 to 37½ ounces, equal from 992 to 1341 grammes. Fister gives the average weight in German brains as 1375 for men, and 1245 for women, and observes that the brains which weigh 150 to 300 grammes less than these generally belong to feeble-minded persons. Glacomini states that the limits of oscillation apparently in both sexes are from 1000 to 1500 grammes, the capacity of a brain 50½ ounces being 1502 c.c., equal 91 cubic inches.

Huxley has said that "when men began to understand that nature is the expression of order with which nothing interferes and that the chief business of mankind is to learn order and govern themselves accordingly," he expressed a great cosmic truth. "It was then that for the purpose of discovering the will of the authority dominating the universe, that only through the eye, the ear, the sense of touch, etc., could they determine any fact, and their first labor was by mechanical devices to assist these senses—to see with lenses what the eye could not, and to measure with chemicals what the finger could not." The result of this was the invention of the microscope, the spectroscope, and other appliances which laid the basis for modern biology. The accuracy of the tests of these instruments is incredible to the lay mind, but logical and scientific to the specialist, because they rest on incontrovertible truth-facts which are a part of the great economy of nature.

As to the improving of human strains, our knowledge of the subject as yet is infinitesimal, and as to experience, we have none. All we actually know about it is from analogous reasoning, based on the crossings of animals and plants. But we also know that certain race mixtures produce fine types of normal manhood and womanhood, and that certain other race mixtures debase these types, and that their products are subnormal and inferior to the parent races in stability and

equilibrium. But to breed men and women on the scientific and progressive scale that animals and plants are based on, we know but little about it. Before anything of the kind can be attempted our laws of marriage must undergo beneficient alterations, pseudo-prudishness be relegated to where it belongs and the reproductive relations of men and women be placed on the high moral plane which the Creator originally ordained. But this has nothing whatever to do with the part which the State now can do in improving the health and human strains of the defective childhood with us. The necessary foundation for the action of the State in the premises is the securing of the facts, the vital statistics of the idiot, the epileptic, the imbecile, and the feeble-minded in its institutions, in its public and private schools, and at large in the homes of the people. These inquiries—researches should be based on law enacted specifically for the purpose. As it is the reports and registration of births, communicable disease, etc., are duties in many parts of the State more honored in the breach than in the observance.

It is said that there has arisen in all civilized societies in various ways and for various reasons, a grave and growing danger to the future of the human race. Not only has the natural elimination of the inferior stocks not been checked, but most societies permit the elimination of the superior. A sociologist of high character and standing has stated that our public institutions for the insane, the criminal, and the defective are "monuments of our own folly," and that until the source of the trouble is eliminated we must continue to build jails, penitentiaries, etc., in order to make provision for all who ought to be within their walls. He states that it pays better to provide permanent care for a feeble-minded boy or girl during the entire reproductive period, than to support their offspring, admits of no argument, and each year's delay

in their permanent segregation means added expense, added difficulties, added misery.

That our social fabric needs improving no intelligent man will gainsay. As it exists today, it is really not adapted to the requirements of humanity in its moral, intellectual and physical aspects. Sociologists claim that "society as existing, is its own index finger pointing to the fact." However, one of the most encouraging and hopeful signs of the times is that "here, as everywhere, the need implies the means." Undoubtedly, as H. G. Wells observes, "there is a large amount of avoidable suffering, privation, and sorrow, and a large proportion of the generations that grow up stunted, limited, badly educated, and incompetent in comparison with the strength, training, and beauty with which a better social organization could endow it." Our ways of begetting and rearing children, permitting diseases to engender and spread, are chaotic, entailing enormous hardship and waste. We must seek an orderly plan for the half-conceived wilderness of human effort. Every society ought doubtless to organize so as to favor the survival of the strongest, most efficient, and the most valuable members. But, in fact, nearly all societies are actually so organized as to permit the physically and mentally defective to leave descendants, at the expense of the more richly endowed.

Dr. Ireland says that influence of consanguinous marriage is simply the influence of a double heredity; that marriage with a blood relation where there is strong parallelism, is undoubtedly dangerous for the offspring. He thinks that idiocy also conduces to tubercular diathesis, and that perhaps two-thirds or more of all idiots are of a scrofulous constitution. He continues: "Malnutrition or perverted nutrition, designated as scrofula, disposes to imperfect development of the nervous centres. Drunkenness is also a potent cause in forming hereditary neurosis through several generations for bring-

ing idiocy upon the children. Children of drunken parents in nearly all cases have unhealthy nervous systems. In idiocy there may be both drunkenness and tubercle. Indeed, sometimes the toxic action of alcohol may be the direct cause of idiocy. Delecterious and toxic agencies at different periods of gestation may produce monstrosities, genetous idiocy and other defects. Pellagrous parents sometimes have produced idiotic children."

The general admixture in one and the same race, according to Reibmayer, may be called far-in-and-in-breeding; that inside of a small circle of individuals of the same race, near-in-and-in-breedings." In-and-in-breeding produces refinement; but morbid characteristics to both parents are naturally also capable by (near) in-and-in-breeding of aggravation and accumulation. "The selection from all the qualities by in-and-in-breeding depends therefore probably on an augmentation of the effect of heredity. Consanguinous breeding is entirely subject to in-and-in-breeding, for it is evident that the fixation of certain characteristics is effected much more quickly by the pairing of demonstrable blood relations." In other words, if there is any predisposition to disease in either one or both parents, or any mental or physical defect, it is likely to be augmented in the progeny of consanguinous marriage, and if the in-and-in-breeding continues for one or several generations, we may look for increased feeble-mindedness and physical defectiveness in the progeny. In communities long settled where there has been little or no mixture with foreign blood, the degeneracy, mental and physical, is sometimes very noticeable.

Professor F. Kraus, of Berlin, says: "The consequence of long-continued near in-breeding is a growing tendency to degeneration. The bad influences become apparent, as a rule, very slowly and only in the course of several generations, hence why they escape in a single generation." Continuing, he says: "A complete suppression of natural selection leads

finally to bodily and mental deterioration, that is, hereditary disturbance of the correlation between the single organs of the body and mind." Peipers calls attention to the fact that there is everywhere, and especially in the rural districts, a far greater amount of blood-relationship and common ancestry than one is generally inclined to admit. Professor Krusemann states that as to the results of marriage between blood-relations, there have been observed all kinds of degenerative phenomena, especially blindness, deaf-mutism, feeble-mindedness, idiocy, epilepsy, insanity, polydactylism, and other malformations.

Prof. J. Orth, of Berlin, observes that the words *inherited* and *congenital* are often used synonomously, but there is no justification for it, because although everything inherited is also congenital, but it does not necessarily follow that everything congenital is inherited. He states "the opposite of inherited is *acquired*. Acquisitions are either extra-uterine or intra-uterine; in the latter they are congenital, but not inherited. What is to be regarded as inherited in those congenital phenomena? Surely not that which has arisen in consequence of disease in the fœtus, or through abnormalities in the ovum; as for these conditions, the maternal organism has no direct responsibility. What the fœtus receives from its mother in the course of its development is not inherited, because the essence of heredity does not consist of the circumstance that the descendants have obtained a particular peculiarity from their ascendants, or that disease has been transmitted to them by their parents, or even their ancestors."

According to the same high authority, there can surely be no difference in the essence of the process, because the placenta has played an intermediate part; that is, because the infection is a placental one. He further observes: "Whether it is through the milk that a mother conveys morphia to her nursling; whether it is through a teuberculous udder that a cow conveys tubercle bacilli to her calf, or whether the convey-

ance takes place through the blood of the placenta, it cannot make any appreciable difference. If any one holds the extraordinary opinion that conveyance through the milk is an hereditary transmission, what about the milk of a tuberculous cow that infects with tuberculosis not her own calf but a strange, or a human suckling? The essence of infection cannot be any difierent if under exactly similar circumstances it attacks different individuals. But if the conveyance through the milk cannot be called hereditary transmission, why should we speak of such when the conveyance takes place through the blood?" Lubarsch says "such a conveyance is only a special kind of metastasis, a metastasis in another individual, but in reality nothing more than what takes place when an infective agent is transmitted form one individual to another by injection into the blood." Finally, there are biological reasons why we should not consider as hereditary all that is derived from the mother during intra-uterine life.

Professor Orth observes: "Everything is acquired that arises through the influence of external agencies in the developing or fully developed individual, and for the fœtus in its mother's womb, every agency is external that proceeds from without it, whether it be situated within the maternal body or outside of it. The fœtus in this respect is not a part of its mother's viscera, but an independent being possessing its own life from the very beginning. Only that may be regarded as inherited which has been imparted to the offspring through the germinal cells. This applies to normal as well as pathological heredity. "It is true," continues Orth, "that pathological heredity presents peculiarities and points which do not arise in normal heredity, but on the whole, there can possibly be no difference between them. To call one kind of heredity biological, and the other pathological, is so far incorrect as pathology is biology, and as general biological principles apply to biological processes, the same as the normal.

But the most important biological principle, as regard heredity, is that the offspring derive their inheritance form their ascendants through the germinal cells."

According to another equally high authority, the bearers of heredity cannot possibly be situated outside the germ cells, but only in their interior, being firmly bound to the molecular constituents of the germ cells with whose internal structure they are most closely connected. "The substance which is the bearer of the inheritance has been designated as *idio-plasma* or *germo-plasma,* and we can therefore formulate the maxim with regard to heredity, and that is: Only through the germ-plasma does a descendant inherit from an ascendant, only that which has passed to the descendant, the germ-plasma can be regarded as inherited. There can be no question of heredity when the new individual receives something which has been introduced accidentally by the germ-cells, as for example, if a spermatozoon enters into the ovum which it impregnates, or in other words, into the future embryo, accompanied by a tubercle bacillus. It is immaterial whether the bacillus adheres to the exterior of the spermatozoon or whether it lies in its interior, if there is room, provided that the molecular structure of the spermatazoon, that is, the germ-plasma, has undergone no important change. Such cases have been spoken of as hereditary tuberculosis of the fœtus, but without any justification, as the germ cells have not produced the tuberculosis; they were surely accidental carriers of the infective virus. This can never be inherited tuberculosis; we might, at the utmost, speak of pseudo-heredity. Only when the germ-cells have undergone an alteration in their internal construction, if in their composition or perhaps only in their chemical constitution, if new conditions arise thereby in the body of the new individual—which is rightly designated as the *soma,* in contradistinction to germ-plasma—the bearer of heredity

which is contained only in the sexual or germ-cells—it is only then that we can speak of hereditary phenomena."

Dr. H. H. Goddard observes: "The low grade idiot has not only a disturbed brain, but his entire organism is disarranged, growth processes upset. In the imbecile the same is true, but to a less extent. In the moron we have the interesting phenomenon of practically normal growth during immature years, but an arrest of growth earlier than in the normal." He also remarks that all defectives are heavier at birth than normals, and states that sex differences are less marked as we go down the grade of defects.

No one dares to say that there are not slight borderline grades of mental defects that may not be conserved to the normal if placed under an ideal life of training treatment Dr. Clark says "this class may be small, but there must be questionable cases of defective children who should be given the benefit of the doubt—that backwardness does not always spell irremovable defect. To this borderland, the twilight of the normal child mind, the train pedagogue, psychologist, alienist and internist may well afford to devote their best energies —not alone for this small and possibly unproductive group of backward children, but for the enormous flood of light such study will throw upon so-called normal yet aberrant types of neurotic child-life."

If those who do not know the facts about the large number of the feeble-minded which we have in our population, were to go forth and make known amongst people of all sorts and conditions, telling them how these evils could be remedied, there no doubt would be a generous response, and we would cease to say as we now do these heirs of ill condition: "We know you are unequal to the struggle of life; we know that only the most precarious livelihood is for you; we know that the discipline of the shop and street will be too much for you; we know that in a very few years you will be returned

diseased and broken, a wreck seeking a home in the alms-house, or you will be locked up in jail, or confined as a dangerous lunatic—all this we know, and yet we launch you forth."

Dr. Clark recommends a careful preliminary study and investigation of every individual of need and delinquency; the proper training and care as long as required. He says the prolonged and diligent inquiry and research of the subject is three-fold. "For all this great work, great expense of time, money, thought and care will be needed. Here is an opportunity for rich men and women of intelligent good will; for legislators, and for the useful application of public funds."

It cannot be too strongly urged that feeble-minded children should have quite as much attention as normal children; that they should have appropriate attention and not ordinary class-room work from which they can derive but little advantage. I fully agree with Mr. Devine, the editor of The Survey, a journal of Constructive philanthropy, published by the Charity Organization of the City of New York, that the greatest need of all for feeble-mindedness is for more institutional care. "When this has been brought about in every State we shall witness a great goal delivery even more significant than that which has followed the discontinuance of imprisonment for debt, or the abolition of the saloon, or the introduction of the probation and parole systems. Care for the feeble-minded adequately for a generation and our expenditures for prisons, reformatories, police, fires, hospitals and alms-houses will be reduced, or what is even better, expenditures for such purposes will be accomplishing desirable tasks which we have not had the courage to undertake." There is no question that biology and economics should unite in demanding that the strains of feeble-mindedness shall be eliminated by the segregation of the mentally deficient.

Section E.

Franklin B. Kirkbride remarks in his essay, "The Right to

be Well-Born" that a study of either town or country shows the dwarfed intellect, the perverted instinct, the weakened body, and the preventable disease in every community, and in some places they have run riot to the almost entire extinction of the finer and higher types. "The pyromaniac continues to amuse himself by destroying property and life; insiduously, but no less surely, the union of defective and degenerate parents is destroying the vitality of the whole communities." As a people—nation—we should awaken to the better realization, he thinks, of the fact that from the standpoint of the taxpayer, if from no other, it is a good policy to seek out the causes of human waste and stem the tide of degeneracy. "Of all our natural resources," he continues, "the conservation of human life is surely the most important."

Another high authority says: "The segregation, care and training of its feeble-minded by any State, does not really add to the taxible cost of the people, but in time tends to diminish it, for the reason it takes out of the courts, prisons, hospitals, asylums, etc., a good percentage of such inmates, and by education, training and care makes them self-supporting. Besides it tends to prevent the increase of crime, pauperism, and immorality. In such a matter, mere pecuniary considerations should not weigh against public morality and decency, for it would tend to lessen prostitution, which is largely recruited from the ranks of the feeble-minded. The State in this matter has a moral and religious duty to perform in rescuing these human derelicts, who as much, if not more, appeal to the sympathy and charity of the people at large, as the normal school child for whom the State is annually spending millions of dollars for education. If we do for the well-born child all that money and science can do to make it a normal adult, we have at least a larger duty to perform for the not-well-born child—the idiot, imbecile, or feeble-minded, who is helpless and dependent, and requires different care, treatment and

training from that of the normal. "Abnormality is not a crime of its infantile or youthful possessor—it is an unfortunate inheritance, either pre-natal or after birth, and whether it is due to hereditary disease or accident it makes no difference so far as the State's responsibility and custodial capacity are concerned. If due to parents, measures of prevention should be taken. But we have the unfortunate child, youth, man and woman in our midst—at large, in jail, in penitentiary, in asylum, and in corrective institutions—and justice, equity, charity, morality and religion demand in this age of civilization, enlightenment and culture that these matters can no longer be ignored, or put aside by claims of inexpediency or poverty on the part of the State, without danger to the general safety and well-being of the community.

Undoubtedly all groups of dependents and delinquents are made up of "large percentage of persons who are mentally defective and therefore irresponsible, incapable of doing right. Such being the case we should try to detect all the mental defectives in childhood, keep a record of them, and colonize them either at once or upon the first intimation that their parents are not taking care of them." In addition to this we should see that feeble-minded adults do not become parents.

It is said the feeble-minded child should never have been born, but it cannot be put out of existence. It should not be put in the almshouse, reformatory, asylum or prison. It should be segregated in an institution or colony where it can be developed and trained. Feeble-mindedness in the child should be detected early, and it must be protected always, for, although many feeble-minded children can be made self-supporting, few, as Dr. Fernald tells us, can become self-controlling. Biology informs us, as well as our own experience, that "the years of the greatest receptivity of the normal child, as well as the defective child, are the early years. And the mind of every child, whether normal, sub-normal or super-normal,

should be trained to the fullest extent possible, so that he may reach the highest development of which he is capable."

Dr. Goddard also very pertinently asks: "What should be the policy of the State in regard to the feeble-minded after they have been discovered?" And then proceeds to answer the question by saying: "They must be removed from their present environment, be segregated, colonized in groups where they may become somewhat useful, and where they may live natural lives in comparative content under the guidance of those who are wise and intelligent and capable of directing them. The feeble-minded must be cared for and kept in an environment where it will be impossible for them to become public nuisances." Many parents, he states, are either normal or of such a high grade of defectiveness that they never get into court, and yet they have feeble-minded children. "We cannot touch these adults, but somehow we must get hold of their children. The child thus brought to official notice will be examined as to his mental development. If he be normal, he will go on to school; if merely backward, he will be placed in a special class; if he be an idiot, imbecile or a moron, his condition will be recorded. At the proper time and in the proper way the parents will be informed of the condition of the child, and of the willingness of the State to take care of it in a colony."

Feeble-mindedness, a continuing heritage, is a persistent cause of poverty, dependence, crime and misery, and must sooner or later be abolished. No doubt certain forms of disease lead to the impairment of the minds of normal infants, but "the feeble-mindedness which fills the almshouses to overflowing, recruits the jails and prisons, clogs the reformatories, furnishes victims to the white slave traffickers, and intermingles with the healthy streams to gain a new vitality and to extend its blight to hitherto untainted families, is undoubtedly largely due to heredity." The feeble-mindedness which is ob-

vious "obtrudes itself whether we like or not upon public notice, laughing to scorn our penny-wise policy of imposing pounds sterling of foolishness on every tax-payer. This surplus feeble-mindedness we drain off as the true conservationists are showing us how by providing adequately for all who will voluntarily accept custodial care, and for those who are dangerous to their neighbors, even it means compulsion."

Edward T. Devine, in the Survey of March 3, 1912, in writing of feeble-mindedness says that by segregation in comfortable and well arranged institutions we can attack the evil at its source. Referring to probable parsimony in the appropriations for such institutions, he observes that there will follow the decay of the future man and woman for the saving of a little wealth. "From feeble-mindedness come a large part of all our prostitution, alcoholism, crime, pauperism, and disease. By neglecting to provide such care, and by treating the feeble-minded as if they were responsible for their acts, we are guilty of the most astounding folly, the most complete disregard of all sound principles of human conservation. The fatuous policy which has condemned to prisons and reformatories thousands of unfortunate children of mature years, but immature minds, which have left at large tens of thousands to become harlots, drunkards and paupers who should have been recognized even in childhood as incompetent, and tenderly cared for if necessary at public expense; and which has entailed upon us and our posterity a grievous burden of illegitimacy and degeneracy ten-fold more expensive than all the hospitals and institutions for which State boards of charities and State conferences of charities have been making their vain petitions."

It is claimed that we need a basis for a complete social policy of accurate statistics of feeble-mindedness. Europe in this respect is far in advace of the United States. The study of eugenics began, as it were, yesterday with us, and as we ad-

vance in the same, we will likely adopt better and more appropriate means to gather such facts and data of value and consistency which the United States Census found it so very difficult to get that it abandoned the quest altogether. However, Congress is making a move in one direction of this subject, by having before it for consideration a measure which will enable the Commissioner of Immigration to detect and exclude alien immigrants who are mentally unsound and physically defective. The defectives of all kinds should be excluded. But at this late date, when we have already admitted into the country, since the middle fifties, nearly 30,000,000 of foreign immigrants, it seems like locking the stable door after the horse has been stolen. One thing, however, is certain, and that is, that we have imported a very considerable amount of foreign feeble-mindedness, which has been augmented in the last decade or so, and which since its arrival, has multiplied so largely as to fill many of our alms-houses, prisons and correctional institutions, besides tainting to a certain extent, the blood stream of normality and health.

While it is well that the National Government maintains the strictest supervisory measures over immigration in the matter of examining immigrants to see that "none who are suffering from contagious diseases, or who are paupers, or who are feeble-minded are admitted to the country," at the same time the tests used, especially as regards feeble-mindedness, should be specifically scientific, comprehensive, and exhaustive. There will, we hope, not be much complaint hereafter on this score, as there is about those already admitted. There is now a very large group of these foreign defectives in the country who are breeding a race of feeble-minded people more dangerous than many barred by the immigration inspectors. Dr. Goddard observes: "There is an army of law breakers as to whom it is a serious question whether the punishment be 60 days in jail, or permanent care where they will be harmless and con-

tent; yet little is done to determine their responsibility. The only thing for the State to do is to establish stations where these cases may be all carefully and critically studied, so that the courts may be able to act intelligently upon the facts."

The Eugenic Review of London, England, July, 1911, in speaking of the segregation, care and training of the feeble-minded, remarks editorially: "If it is asked, 'what would be the use of this?' and if it is objected that it would be too expensive, we would answer that the results to be expected are at least three-fold. We may hope thus to learn much that we do not know as to the heredity and natural causes of feeble-mindedness, and as to how the feeble-minded can best be treated so as to make them useful and happy. In the second place, well-conducted schools for the feeble-minded must have a great effect on our prisons. Even with our present knowledge, we know that a considerable portion of prison population should certainly be in such schools, and further research may show more than we now think might with advantage be thus transferred. But besides relieving the prisons of such inmates, these schools certainly would afford a more excellent way—a more scientific, common sense, and religious way of training these unfortunates. Thirdly, these trainers of feeble-minded children would constantly remind us that their pupils differ from the normal only in degree and not in kind." Some of the more advanced institutions for the care, education and training of mental and physical defectives have among others the following departments: A psychologist, with two assistants; a bio-chemist, with two assistants; an anthropometer, with an assistant; a neurologist, with an assistant; three field workers in heredity; a chief of the case history work, with three assistants; an editor, with an assistant; a chief of experimental pedagogy, with teachers and trainers; a food specialist; a librarian, stenographers, clerks, etc.; various apparatuses, library, etc." In this connection it

may be well to remark that notwithstanding the enactment of the National Pure Food and Drug Law, pure food, pure drugs, and pure products of every kind can only be secured by the exercise of a police power delegated by the community to local, State and National Government.

Dr. L. P. Clark, who is a specialist on idiocy and laboratory research, in connection with it, concludes that the whole question of the nature and cause of feeblemindedness needs a thoroughly detailed study from all standpoints. "Now that State care and segregation of mental defectives are in the ascendency in sociological progress," he says, "we may look forward to a time when all institutions caring for this class will have properly equipped laboratories for studying this problem." According to his view a thorough and systematic scheme of research into feeblemindedness should embrace:

"(1) Intensive research of family stock to record environment and parentage from which idiocy is recruited.

"(2) Studies in the institutional laboratories along approved methods of psychology, anthropology, and clinical pathology.

"(3) Finally, when we have traced the individual idiot from his stock-origin through his individual reactions to the ideal colony life in all its training features of mind and body. involving the modifying influences of such training and care on his development and growth, the laboratory of research should be equipped so as to analyze the whole terminal state at death."

The police statistics of habitual criminals in the slums of cities indicate their reversion to the condition of "the free savages who once roamed the forests of Germany or Britian." Lombroso found features common to both "scanty hair, light bodily weight, small cranial capacity, retreating forehead, early synostosis of sutures, large temporal sinuses, great development of the under jaw, inequality of the orbits, unclean skin,

large deformed ears, close resemblance between the sexes, insensibility to pain, callousness of disposition, courage combined with cowardice, or idleness, boasting and superstition, fondness for metaphor and taste for tattooing." But other authorities say that many of these traits are not characteristic of savages—that scanty beard is found on the Mongolian and Negro but not in the German or other branches of the Caucasian race. Indeed, some savages have also large and well-formed crania. To sum it up, Ireland says, "the habitual malefacor who fills our jails is a degraded product of our complex civilization."

Section F.

Dr. Hock, a British alienist, has compiled the following table to indicate the proportion of idiots to lunatics. For every 100 lunatics there were in—

Wurtenburg,	97	idiots.
Prussia,	158	"
Bavaria,	154	"
Saxony,	162	"
Austria,	53	"
Hungary,	140	"
Canton of Bern,	177	"
France,	66	"
Denmark,	58	"
Sweden,	22	"
Norway,	65	"
England and Wales,	74	"
Scotland,	79	"
Ireland,	69	"
America,	79	"

In England in 1891, there was one insane person to every 298 of her population. In Scotland there were in 1891, 259 insane to every 100,000 of population. The number of feeble minded in the United States in 1890 was 95,609; and the num-

ber of feeble-minded per every 1,000,000 of population in 1890 was 1,526. The insane for the same year per 1,000,000 numbered 1,679. Dr. Fernald says in the country as a whole there is about one feeble-minded person to every 500 of the population, but this is thought to be some what of an underestimate, and that one to every 300 of population would come nearer the mark. Dr. Ruman estimates the epileptics in New York State alone at 15 per 10,000 inhabitants, and that 18 per cent. of all chronic epileptics fall within school attending age.

Dr. Isaac Kerlin found four idiots in 100 families in Philadelphia in 1880, as a concurrence, imbecility and insanity begetting 27 per cent. Dr. Koch found that 24 per cent. idiots had brothers and sisters abnormal. Ireland says that hereditary disposition has been noted in from 20 to 50 per cent. of all idiots and imbeciles. Dr. Rogers, late of Glenwood, Iowa, now of Fairholt, Minn., found marked hereditary neurosis in 25 per cent. of the cases he examined. Dr. Herman Piper, of Berlin, in 1893 found that 18 per cent. of congenital idiots had nervous diseases in parents and relations.

Grafton D. Cushing, speaker of the Massachusetts House of Representatives, in his inaugural address, March, 1912, said: "There are at least 9000 feeble-minded persons in Massachusetts whose condition is a serious drain on the sources of all public and private charity. The feeble-minded almost invariably become the dependent, the delinquent, or diseased members of our community, and their offspring become equally a charge to the State. There are now cared for in various institutions about 2000 feeble-minded, and there are 7000 more, the ultimate burden of whose criminality and immorality will be a cumulative burden and expense to the State until proper segregation has been provided. It has been calculated that if $300,000 a year were spent for fourteen years sufficient accommodations could be provided for the segregation of these unfortunates. It is a large sum but the necessity is urgent,

and unless the State meets the problem promptly and courageously, the constantly increasing cost of the feeble-minded and their descendants through our courts, prisons, hospitals, asylums, and charitable institutions will probably amount to more than that large sum without checking the evil."

Of 85 cases from the reformatory at Elmira, New York, during 1904, who were declared beyond question to be feeble-minded, 37 had been arrested at least once after leaving that institution. Of the 100 cases in the public schools of New York, Dr. Moore found 63 to be immoral or delinquent. If the Binet tests in themselves are conclusive, according to another high authority, "out of 100 young women tested, from 16 to 29 years of age, there was found not one who was normal mentally. If these tests accurately measure their mentality, these young women with their physique, the strength, the appetites and the passions of grown women, with their experiences of the life in the under-world, have only the average mental capacity of little girls of 10 years to guide their own lives." Of another 100 young women examined, 75 came from New York and 25 from other States; 22 were foreign-born; 37 were American-born, with both parents foreign-born; 30 were American-born of American parentage; 71 were committed for soliciting or as common prostitutes; four for habitual drunkenness; 25 for felonies and misdemeanors. Of another lot of 25 young women committed for sexual offences, all but six gave a record of immorality, two being married women and four domestic servants. In all these cases more or less feeble-mindedness was evidenced.

Of the 42,750 children of Boston, Massachusetts, examined by school physicians during December, 1911, and January and February, 1912, only 14,957, or 35 per cent., were found to be physically normal, healthy children. The defective children, physicially below par, numbered 27,795, or 65 per cent. The defects in detail were as follows: Mentally deficient, 223; de-

fective nasal breathing, 3,562; hypertrophied tonsils, 9,738; defective teeth, 19,518; defective palate, 86; cervical glands, 4,425; pulmonary diseases, 456; cardiac disease, 1,129; nervous disease, 213; orthopedic defects, 521; skin affections, 3,509; rickets, 575; malnutrition, 1,611.

Dr. Goddard, director of the training School laboratory for the feeble-minded at Vineland, New Jersey, in his essay, "Social Investigation and Prevention," states that "300,000 people in the United States are feeble-minded; 500,000 have not sufficient intelligence to manage their own affairs with ordinary prudence; and a still larger number have not sufficient will power to force themeslves to do the right thing when it is pointed out to them." This army of 300,000, 500,000 or more furnishes the recruits for the ranks of the criminals, the paupers, the prostitutes, the ne'er-do-wells, and others of our social misfits. Managers of our jails, reformatories, and prisons, estimate that from "4 to 5 per cent. of their inmates are mentally defective." In fact, actual tests which have been made in some of our reformatories for girls and boys show that at least 25 per cent. of them are distinctly feeble-minded. Goddard thinks that a large percentage of the paupers in our alms-houses are mentally defective, and have become public charges because of inability to earn an honest livelihood.

The army of irresponsible law breakers which every considerably populated State in the Union has in its midst, is a matter for the gravest consideration of our law-makers and publicists, and requires the exercise of the best type of statesmanship and humanitarianism to settle in the interest and well-being of the whole community. As it is, States are spending hundreds of thousands of dollars to suppress, punish the steadily increasing force of human derelicts, and but very little towards their amelioration and prevention. The money spent in examining persons accused of crime with the view to determining their guilt or innocence is ofttimes an unnecessary waste

of the people's funds. It is like plugging up the bung hole of a cask and letting the water escape through the spigot. "The idea of subjecting to criminal prosecution and punishment a group of feeble-minded people, as undeserving of punishment for the crimes they commit, is as preposterous as punishing the man who shoots his neighbor by accident."

In 1908 the English Royal Commission reported for England one feeble-minded person in 217 of the population; for Scotland, one in 400; for Ireland, one in 175. In 1910 the director of Public Health and Charities of Philadelphia made a census of the feeble-minded in that city, and found, with a total population of about 1,500,000, more than 3000 evident cases, and 8000 so deficient that the statement of their mentality depends principally on the view-point of the examiner.

In 1911, the pupils in the public school in a town of 10,000 inhabitants were carefully tested by trained observers, using the Binet measuring scale, and the test showed one feeble-minded child in 200. The commission appointed to locate the site for the Letchworth School for the feeble-minded in New York State, estimated that there were about 12,300 feeble-minded persons in that State.

St. Louis cares today for 400 dependent and delinquent children of all ages and races in the same institution. If the bill now before the legislature of Missouri becomes a law, dependents and defectives will be separated. Missouri has about the same population as Massachusetts, and if the latter can find boarding houses for 4000 defective children, then Missouri ought to be able to find some too.

The Training School, a publication issued monthly by the Vineland, N. J., Training School for the Feeble-Minded, in its issue for March, 1912, states that a letter of inquiry was sent out by it to State reformatories and industrial schools, asking: "(1) The number of inmates in institution; (2) the number considered mentally defective; (3) whether or not such cases

were desirable in an institution of that character; (4) what has been found the best method of treatment; (5) what was their estimate of success in the treatment of such cases." There were received 34 replies to the 37 letters sent out, representing 13,188 cases, of whom 14.5 per cent. were mental defectives.

The field workers of three institutions in New Jersey have reported 4,124 cases of feeble-mindedness not in institutions, and 1,348 in institutions of that State. Four families studied by the Training School for the Feeble-Minded located at Vineland, New Jersey, show 2,798 individuals, of whom 687 are known to be feeble-minded and 1,532 undetermined, 267 families traced under the auspices of the same school, show 11,345 individuals, of whom 1,049 are known to be feeble-minded, and 6,219 undetermined.

It is authoritavely stated that from 60 to 70 per cent. of the cases of feeble-mindedness are hereditary. Alcoholism, tuberculosis, and syphilis are found inextricably mixed up with this condition. Only about 10 per cent. of the feeble-minded in the United States are cared for in institutions.

The foregoing facts and figures are merely the surface showings of this great incubus upon our normal population, and give but an inkling of the final story to be told of our barbarous and inhuman treatment and criminal neglect of this great army of irresponsible unfortunates, some of whom we imprison, hang and electrocute. In order to avoid further perpetration of this great wrong, there should be made more persistent laboratory research into the causes of feeble-minded, and the science of eugenics be more closely studied, so that we can better understand the make-up, life, and growth of the individual child, and to more attention be given neuro-pathologic studies of the lesions found in the *entire* body after death.

In the public schools of the Union, especially in the Northern, Eastern and Western sections, where the foreign element,

with its descendants, is largely represented, and the Southern States, where in-breeding has been more or less practiced, a constant watch should be kept for those who require institutional care, and for those who can be retained safely in the schools and taught with success in special classes.

In New York State a bill is now before the legislature which authorizes the appointment of a commission to examine the feeble-minded, epileptics, criminals, and other defectives in the State hospitals for the insane, State prisons, reformatories, and charitable institutions, and to perform operations to prevent procreation on their part when in the judgment of the commission their offspring would inherit a tendency to insanity, crime, etc. In the State of Washington a law of this character is already in operation, but it goes a little further. It examines the candidates for matrimony, and if either or both parties are found wanting in the essential factors of health, mental and physicial normality, marriage between them cannot take place.

From the foregoing it will be seen with what a vast amount of crime, pauperism, and feeble-mindedness Europe and the United States have to contend, and in view of the methods of collecting, collating and verifying the statistics relating to the same are imperfect, and in many instances based wholly on estimates, the figures given are more likely to be under than above the actual facts. The United States for nearly half a century has been the dumping-ground for the criminal, pauper, and feeble-minded emigrants of southern and eastern Europe, which in connection with our native production of the same, has made us the "melting pot of crime, pauperism, and feeble-mindedness" of such vast proportions, that we are astounded—thunderstruck by simply glancing over the rim of it.

But as Matthew Arnold says, "there is abroad in the universe a power not within ourselves that makes for right-

eousness," so let us pray that it will make for the assured protection, tender care, and proper training of the feeble-minded in our midst.

THURSDAY AFTERNOON

Report read by Dr. Hays, Chairman Board of Medical Examiners.

BOARD OF MEDICAL EXAMINERS OF THE STATE OF NORTH CAROLINA.

Hendersonville Meeting, June, 1912.

They were:

146 registrations,
22 received license by reciprocity,
2 received license by oral examination,
85 received license by written, oral and practical combined.
37 failed.

Licensed by Reciprocity, Hendersonville, 1912.

Name and Address	Age	Preliminary Elucation	College	State
Bandy, Willliam G., Maiden	28	College 2 years	Vanderbilt 1908	Wash.
Cocke, Charles H., Asheville	30	A. B. Univ. Va.	Cornell 1905	Miss.
Glenn, Marshall R., Asheville No. 1	30	B. S. Univ. of N. C.	Jefferson 1909	Okla.
Harris, Stevens T., Highlands	39	2 years Univ. Ga.	P. & S. Alan 1894	Ga.
Hooper, Joseph W., Wilmington	25	Balto. City Col.	Univ. of Md. 1909	Md.
Hill, Chas. D., Durham	50	A. B. Univ. of N. C.	Univ. of Va. 1888	N. J.
Hunter, J. H., Spartanburg, S. C.	32	———	Univ. of Tenn. 1908	S. C.
Huston, Walter H., Asheville	37	B. S. Knox Col., Ill.	Rush. Med. Col. 1904	Ill.
Lynch, Jas. M., Asheville	35	Univ. of N. C.	Univ. of Md. 1904	Md.
McManus, Walter L., Bonlee	34	High School	Alan School Med 1906	Ga.
McClelland J. O., Maxton	40	———	Med. Col. Va. 1908	Va.
McMahan, J. Walter, Crestmont	37	A. B. Murphy Col.	Tenn. Med. 1900	Tenn.
Moore, A. Wylie, Charlotte	34	Univ. of Va.	Bellevue 1902	N. Y.
Morris, Ernest C., Asheville	33	High School	Univ. of Ga. 1899	Ga.
Schoonover, Robert A., Greensboro	31	High School	Balto. Med. 1905	D. C.
Schonwald, J. DeWitt, Wilmington	25	High School	Jeff. 1908	Ohio
Smith, Bernard R., Jeff. Hosp., Phil.	29	B. S. Davidson, N. C.	Jeff. 1911	Del.
Stewart, John W., Straits	40	High School	Col. Univ. (D. C.) 1900	D. C.
Terry, Philip R., Asheville	32	High School	G. W. Univ. (D. C.) 1907	D. C.
Thompson, Fred, Pine Bluff	48	High School	Harvard 1888	Mass.
Waite, Netta May, Chattanooga, Tenn.	42	High School	Chatta. Med. 1904	Tenn.
Jefferies, Thomas N., N. Wilkesboro	64	High School	Jeff. 1876	Penn.

BOARD OF MEDICAL EXAMINERS OF THE STATE OF NORTH CAROLINA.
Hendersonville Meeting, June, 1912.

The following were granted license by examination:

Name and Address	Preliminary education	College	Year
Adams, R. K., Monroe	3 years at college	Jeff	1912
Battle, Geo. C., Rocky Mount	High School	Univ. of Md.	1912
Beard, G. C., Cedar Creek	High School	Univ. of Md.	1912
Beam, R. S., Rutherfordton	1 year at college	Jeff	1912
Brawley, M. H., Mooresville	3 years at college	N. C. Med.	1910
Buchanan, S. R., Concord	2 years at college	N. C. Med.	1912
Bullock, H. A., Bullock	High School	Univ. Col. Med.	1912
Bullock, G. W. (col.), Penola	College	Leonard	1912
Cannady, N. B., Oxford	High School	Jeff	1912
Caine, J. E. (col.), Tarboro	A. B. Shaw Univ.	Leonard	1912
Cheek, C. E., Connelly Springs	B. S. Wake Forest	Univ. Col. Med.	1912
Coe, S. S., Greensboro	Univ. Col. Med.	————	1911
Cochran, J. D., Statesville	2 years at college	Univ. of Md.	1912
Colemen, Wm. A. (col.), Salisbury	Col. grad.	Howard	1910
Creft, H. H. (col.), Raleigh	1 year at college	Leonard	1912
Craig, T. E. (col.), Waxhaw	Biddle Univ.	Knox Med.	1904
Daniels, R. L., Oriental	Univ. of N. C.	Med. Col. Va.	1912
Davis, J. F., Glendon	High School	Med. Col. Va.	1912
Erwin, E. A., Pineville	2 years at college	Med. Col. S. C.	1912
Fields, B. T., Greensboro	High School	Univ. Col. Med.	1912
Garris, F. H., Winsor	3 years at college	Jeff	1912
Gambill, I. S., N Wilkesboro	High School	N. C. Med.	1912
Garrett, F. B., Rockingham	High School	N. C. Med.	1912
Goode, V. T., Jr., Rutherford College	Rutherford College	Univ. Col. Med.	1912
Grier, C. T., Matthews	2 years at college	N. C. Med.	1910
Griffin, T. A., Clayton	High School	Univ. of Md.	1907
Hannah, Louis, Atlanta, Ga.	High School	P. & S. Atlanta	1911

Name and Address	Preliminary education	College	Year
Hardee, W. P., Stem	2 years at college	Jeff	1912
Harper, Wm. (col.), Wilmington	High School	Long Island C. H.	1909
Herbert, F. L., Andrews	High School	Tenn. Med.	1904
High smith, G. F., Dunn	2 years at college	Univ. Col. Med.	1912
Hollingsworth, Eddie, Roseboro	High School	N. C. Med.	1912
Hinnant, Milford, Selma	2 years Univ. N. C.	Univ. of Md.	1912
Hughes, T. E., Raleigh	A. B. Rich Col.	Univ. of Va.	1910
Irvin, S. S., Mt. Airy	B. A. Univ. Va.	Univ. of Va.	1912
Johnson, W. C., Canton	College	Tulane	1912
Jones, J. P., Franklin	High School	Jeff	1912
Kay, Jno. W. (col.), Weldon	College grad.	Leonard	1912
Leonard, Geo. F., Lexington	G. W. Univ. Wash.	A. B. Univ. N. C.	1912
Little, E. E., Statesville	College	N. C. Med.	1912
Livingston, E. A., Gibson	High School	Univ. of Md.	1912
Long, Glenn, Catawba	N. C. Med (college?)	———	1912
Mann, Ira T., High Point	2 years at college	Jeff	1912
Martin, R. E., East Bend	B. S. Guilford	N. C. Med.	1912
Mauser, R. F., Hickory	A. B. Lenoir Col.	Jeff	1912
Moseley, H. P., Kinston	College	Univ. Col. Med.	1912
McAdams, C. R., Siler City	N. C. Med.	N. C. Med.	1912
McFayden, O. L., Fayetteville	College	N. C. Med.	1912
McGoogan, B. J., Rennert	1 year at college	Univ. of Md.	1912
McKnight, Portia Mary, Charlotte	College	N. C. Med.	1912
Nicholson, C. R., Hamptonville	High School	N. C. Med.	1912
Palmer, Horace, Warrenton	High School	Atlan School Med.	1912
Patterson, Reid, Statesville	High School	N. C. Med.	1912
Phillips, C. C., Winston	High School	N. C. Med.	1912
Rankin, S. H., Concord	A. B. Univ. of N. C.	Jeff	1912
Raymer, M. B., Eufola	A. B. Lenoir Col.	N. C. Med.	1912
Roberts, N. C., Coats	High School	Tulane	1912
Rowe, R. H., Newton	A. B. Catawba Col.	Univ. of Louis.	1912

Name and Address	Preliminary education	College	Year
Rozelle, Charlotte	College	N. C. Med.	1912
Saddler, R. C., Charlotte	B. S. Davidson	N. C. Med.	1912
Salmons, L. R., Hamptonville	High School	N. C. Med.	1912
Seem, R. B., Wilmington	Lafayette College	Johns Hop.	1906
Sebastian, S. P. (col.), Greensboro	Mico Col. (B. W. I.)	Leonard	1912
Sink, C. S., N. Wilkesboro	High School	N. C. Med.	1912
Sherrill, E. A., Statesville	B. S. Davidson	Univ. of Md.	1912
Smith, A. J., Kenly	College	Vanderbilt	1912
Stanly, J. P. (col.), Newbern	Shaw Univ.	Leonard	1912
Stevens, Wm. L., Indian Town	High School	Univ. Col. Med.	1912
Strudwick, Wm. C. (col.), Durham	A. B. Shaw Univ.	Leonard	1912
Sturdivant, B. B., Marshville	High School	Md. Med.	1912
Swindell, F. O., Bellhaven	High School	Univ. Col. Med.	1912
Terry, Wm. C., Hamlet	2 years at college	Univ. of Md.	1912
Terry, J. R., Lexington	High School	Univ. of Louis.	1911
Townsend, M. L., N. Wilkesboro	College	Ind. Med.	1906 oral
Tydemen, F. W. L., Charlotte	B. S. (Amsterdam)	N. C. Med.	1912 led class
Vass, R. S. (col.), Raleigh	A. B. Shaw	Leonard	1912
Wall, R. L., Wallburg	B. S. Wake Forest	Jeff.	1912
Walker, D. D., Warsaw	3 years Univ. N. C.	Jeff.	1912
Ward, P. W., Gliden	2 years Wake Forest	Med. Col. Va.	1910
Washburn, B. E., Bostic	A. M. Univ. N. C.	Univ. of Va.	1911
Weatherly, T. B., Gorman	High School	Univ. Col. Med.	1912
West, L. N., Raleigh	Univ. N. C. 1 year	Jeff.	1912
Whiteside, Margaret, Richburg, S. C.	College	Woman's Med. Col. Pa.	1912
Whitaker, R. B., Kinston	College	Univ. Col. Med.	1912
Wilder, Eugene, Asheville	1 year at college	Marion Sims Col. St. Louis	1900
Wrenn, Frank, Siler City	A. B. Trinity (Durham)	Jeff.	1912
Roberson, Mike, Durham	College	Med. Col. Va.	1912

CHEMISTRY AND DISEASES OF CHILDREN.

J. L. NICHOLSON, M.D., Richlands.

Questions by each member of Board of Medical Examiners, 1912 examinations.

Answer eight questions, twenty points will be offered through an oral and practical test examination.

1—Complete the following equations, and write, under its proper formular, the names of each resulting chemical compound:

(a) $C\,Cl_3\,C\,O\,H + K\,O\,H =$

(b) $2\,Nacl + H_2SO_4 =$

2—Give the names and the formulæ of three chemical substances in common use as disinfectants, and briefly survey their use and application, in the prevention of communicable diseases.

3—Mention four important chemical processes constantly occuring in the living body, and cite an instance fo each process.

4—Name the principal organic constituents of urine, and explain their respective metabolic significance.

5—Tell how we may determine the functionating capacity of the kidneys, and the practical value of the knowledge so gained.

6—Point out the chemical relationships of the larger groups of organic compounds.

7—State the period of incubation and communicability of:

1—Scarlet fever.
2—Measles.
3—Rubella.
4—Varicella.
5—Pertusis.
6—Mumps.
7—Diphtheria.

8—Name the bacteria chiefly concerned, in the production of the toxaemia of bacillary dysentery; and discuss from a dietary viewpoint, the principles involved in its treatment for the purpose of so affecting bacterial metabolism, as to modify or inhibit their toxic products.

9—Set forth concisely the present status of our knowledge of acute poliomyelitis.

10—Discuss the definite clinical syndrone known as *milk nutritional disorder,* presenting 1st, The cause and nature of the disturbance; 2nd, its symptoms, and 3rd, its treatment.

QUESTIONS ON ANATOMY.

Dr. W. W. McKenzie, Salisbury.

1—Describe the clavicle.

2—Name the articulation of the Superior Maxillary bone.

3—Name the Muscles of the Shoulder and give the origin and insertion and nerve supply of the Pectoralis Minor.

4—Describe the Sacral Plexus and name its branches.

5—Mention the branches of the Internal Iliac artery.

6—Name the component parts of the Spermatic Cord.

7—Describe the Vagina.

8—Describe the Trachæ.

9—What pathologic changes occur in Caries.

10—Distinguish between fatty degeneration and fatty infiltration of kidney.

Answer only eight questions.

EXAMINATION IN MATERIA MEDICA AND THERAPEUTICS.

John Bynum, M.D., Winston-Salem.

1—Explain the distinction between physiological action and the therapeutic use of medicinal agents.

2—What are the therapeutic uses of nitroglycerin? And why valuable when administered in connection with digitalis?

3—Why should you prescribe the salts of the alkaloids instead of the alkaloids themselves?

4—Give classification, action, dose, dangers and indications for use of pilocarpin.

5—Give the action, dose, dangers, uses and contraindications of digitalis.

6—Give the action and uses of one of the preparations of calcium used in medicine.

7—Give dose, action, uses and dangers of phenyl salicylate.

8—What are the contraindications to the use of quinin?

9—Write two prescriptions for each of the following: Uremia, Chronic Lead Poisoning, and Scabies. Write without abbreviation.

10—Give the physiologic action of oleum ricini.

EXAMINATION IN GYNAECOLOGY AND OBSTETRICS

L. B. McBrayer, M.D., Asheville.

I.

(a) What is the most frequent cause of laceration of the cervix?

(c) Name some diseases resulting from unrepaired lacerated cervix.

(d) Describe operation of trachelorrhaphy.

II.

(a) Give cause, symptoms and treatment of ophthalmia neonatorum.

(b) Describe the prophylactic treatment; when should it be used?

III

(a) Describe operation of curettage.

(b) Mention two or three indications for its use.

(c) Mention the dangers of the operation.

(d) In what particular infection in the puerperium is curettage contra-indicated?

IV.

(a) Mention two serious conditions of pregnancy supposed to be due to auto-toxemia.

(b) Mention the internal organs whose cell injury or disturbed functions are important factors in the conditions.

(c) Give the general plan of treatment best suited to meet these abnormal conditions.

V.

(a) Mention some of the causes of cystocele in the female.

(b) Describe briefly the treatment.

VI.

(a) What are the indications for Caesarean section?

(b) Give briefly the essential steps in the abdominal operation.

These questions are rated at 60. The practical examination will count 40.

Note—The proper interpretation of the language used is a part of the examination—questions in regard thereto will be considered as an admission of a lack of proper qualification, and graded accordingly.

PRACTICE OF MEDICINE.

Dr. H. H. Dodson, Greensboro.

I.

What is the significance of the apex beat?

What relation has it to systole?

How would you determine whether a murmur is systolic or dyastolic in origin?

II.

Give the indications for digitalis in lesions of the heart.

Give the diseases of the heart in which digitalis is contra-indicated.

III

Name the important diseases in which the blood picture aids materially or verifies the diagnoses.

Under what conditions would you get an increased

a. leucocyte count.

b. red blood count.

IV.

How would you treat Phlebitis of the femoral vein complicating Typhoid Fever?

b. If embolus is swept into blood stream, where would it most likely lodge, and through what channels would it travel?

V.

Give briefly the pathology of Broncho-Pneumonia.

Give differential diagnoses between Broncho-Pneumonia and Chroupous Pneumonia. (Lobar.)

VI.

Give the physical signs of cavity of the lung.

Give physical signs and causes of Emphysema of the lungs.

VII.

Differentiate haematuria of renal origin from haematuria of cystic origin.

Give causes of each.

VIII.

Give urinary findings in acute nephritis.

How would digitalis, caffeine and alkaline diuretics act in this condition, and why would you not use them?

Give the proper treatment.

IX

Give the clinical manifestations in the extremities produced by

a. diseases of the motor cells of the anterior horn.

b. diseases of the central motor tract.

X.

What are the indications for Lavage?

Under what conditions would it be contra-indicated?

What is the significance of

bile in the gastric contents.

blood in the gastric contents.

Sign pledge.

EXAMINATION ON SURGERY.

Dr. John C. Rodman, Washington.

I.

(a) What is the operation of Supra Pubic Cystotomy?

(b) Describe its operative technique.

(c) For what reasons is it resorted to?

II.

Describe briefly two methods of end to end Intestinal Anastomosis, giving the names of authors.

III

(a) Name the different varieties of Abdominal Hernias.

(b) Describe briefly the Bassini operation for Inguinal Hernia.

IV.

Give linear and muscular guide for ligation of Anterior Tibial Artery, at its middle third.

V.

How would YOU treat a fracture of the middle third of the Femur?

VI.

Differentiate clinically between benign and malignant Tumors.

VII.

Describe Chopart's amputation, and through what joint is it made.

VIII.

(a) How would you treat a Carbuncle?

(b) What is the Infecting Organism?

EXAMINATION IN PHYSIOLOGY AND HYGIENE

BENJ. K. HAYS, M.D., OXFORD.

This paper counts as 60 in value. Each applicant is required to take an oral in addition to this. Write answers in a clear distinct hand, and do not use more space than the blank below each question. Do not run words together. All answers that are doubtful because of hand writing will be counted as missed.

1—Give types (anatomical) of glands, and name one of each type.

2—Give nerves of special sense (not of feeling)

3—Name the roots of the fifth cranial nerve with regard to both size and function. Name chief ganglion, and state which root it is on. Give branches arising from ganglion (not subdivisions). What becomes of the root that does not enter ganglion?

(This entire question may be answered by a diagram.)

4—What is the difference between inspired and expired air? How is oxygen carried in blood? Give chemical name of molecule containing oxygen.

5—Name ductless glands and where pathological conditions

are supposed to arise from disorders of same, name them.

6—Name six enzymes. Where found. Action. (Express action in one word.)

7—State (very briefly) the chief functions of blood.

8—What disease would be more especially feared in drinking colon bacilli? Why?

Pledge.

A PLEA FOR BETTER OBSTETRICS.

JOHN W. NEAL, M.D., MONROE.

In a late number of the A. M. Journal Dr. J. W. Williams criticises very severely the Obstetric teachings of the Medical colleges of today. He points out their lack of facilities and material and incompetency of their teachers, and shows that their graduates must of necessity be poorly prepared to cope with the grave conditions that they may at any time meet in the lying-in-chamber. Dr. William's criticism may be just. The advances in obstetrics may not have kept up with the improvements in the other branches of medicine. But for the last few years there has been great improvement. The Medical Colleges are awaking from their lethargic sleep of incompetency. They have had a vision of their opportunities and are thoroughly aroused to their duty. They are far more efficient today than 30 years ago when graduates were sent out to work on their own responsibility without having witnessed a confinement. The young men that are entering our profession are quite well qualified, and diligent observation and experience have done much for the older men, so that a majority of our profession are today fairly well qualified for the practice of obstetrics. By far better work is done than 20 years ago. In making examinations for life insurance to the question as to the cause of death of mother or grandmother, one is struck with the frequency of the answer, "Child birth" or "Child bed fever." Glad to say that child bed fever is not the terror to the prospective mother that it was 25 years ago.

It is not to our qualifications as obstetricians but to the obstetric work that we are doing that I want to call your at-

tention. Are we working as well as we know? Are we faithfully applying the knowledge that we have? Do we watch the prospective mother during the period of gestation as carefully as we should, supervising her diet and exercise properly so far as practicable, testing the urine at frequent intervals and making all necessary examinations to make sure that she approaches her obstetric couch in the best possible condition? Do we give the mother all necessary treatment and directions in order to secure the strongest, best developed fœtus possible? For even a fœtus has rights, and a most important part of an infant's life is before birth. Do we see that we are clean in person, and hands and fore-arms thoroughly disinfected before we approach the patient? Do we see that the patient is clean and disinfected and every thing that comes in contact with her is clean? Do we use all antiseptic precautions during and after confinement to secure the best results and safest puerpernum for mother? Do we see that the child breathes properly and is properly bathed and dressed and eyes disinfected and that nothing is left undone to prevent disaster to it? If not, why not? Many of our profession are too careless in the cleanliness of themselves and patients. Not twelve months ago I knew a physician who had a severe infection of the hand involving the lymphatics of the arm and axila and who in less than one week thereafter attended three women in quick succession and each of the three were similarly infected within 36 hours of their delivery. One woman died within one week thereafter. Another was extremely ill for more than a month. A microscopic examination of a specimen from the ulcerated crevix showed a very violent strepticocio infection and the patient finally had a large pelvic abscess evacuated. The third has made a partial recovery but is still under par. In these three cases the medical attendant was evidently the infection carrier.

Probably not a member in this hall is guilty of such gross

negligence, not one so grossly ignorant of the importance of antisepsis and cleanliness in obstetrics. Such men do not often attend medical society meetings. Would that they did, much of the ignorance, incompetency and negligence would disappear. But we have many such men within the ranks of our profession today. The public generally are ignorant of the gravity of confinements and are also unable to discriminate between the competent and the incompetent physician and for these reasons fail to secure the most competent assistance possible. It is this latter class, the incompetent physician, who so frequently brings the entire profession into unenviable comparison with the midwife, and it is our duty when we come in contact with such men to call their attention to the dire results of their negligence and ignorance and show them the better way. An occasional infection may happen in the work of the most careful accouchere but by far the greater number of infections are preventable and are due to carelessness and ignorance.

But there is another class of incompetents of whom I wish to speak. They are entirely outside the pail of the medical profession. It is the midwife. She is usually the most ignorant woman in the neighborhood. She does not practice even common cleanliness and has no knoweldge whatever of antiseptics. She thinks that the ability to tie a granny knot and use a pair of shears is ample knowledge for the practice of midwifery. She needs no further description from me. You are all doubtless too familiar with her work. You are too often called to follow and clean up after her and operate on it is the duty of the State to protect the mothers of her citizens and their offspring from their ignorance.

What should be the qualifications and requirements of a midwife? She should be of good moral character, have a good common school education, competent to read and write well. She should have a thorough knowledge of antiseptics

and appreciate the value of cleanliness. She should have a fair knowledge of the anatomy and physiology of the female reproductive organs and mammary glands. She should have a thorough knowledge of all symptoms of ill omen that may develop either during gestation, labor or the puerperum and be required to call a physician immediately upon the development of any of them. She should be able to diagnose a normal labor and conduct it to a successful termination and give the proper attention to the child immediately after birth and to care for both properly during the puerperum. The State peral infection following a midwife of this class. Time, midsummer, windows and doors closed. The odor that met me was terrible. The patient, a mother with her first born, lying in a bed wreaking with infections most probably direct lineal descedants of the bacterial inhabitants of the hands and wearing apparel of the attendant. When I ordered the windows and doors opened I was met with the protesting suggestion that Mrs. D. might take cold. When I called for hot water and clean linen for patient and bed and proceeded to clean out and clean up and ordered the patient to be kept clean, the disapproving mutterings of the female attendants were plainly audible and I was positively informed that Drs. A. and B. were not treating Mrs. P. that way. (Mrs. P. subsequently died while my patient recovered.) This scene occurred many years ago, but similar scenes are still too frequent. Such doubtless many of you have observed. And I dare say that you will bear witness to the fact that by far the larger per cent. of infections that you have treated have been those following the work of filthy ignorant midwives or careless obstetricians.

There is a very large part, probably more than 50%, of the obstetric work in the State done by this class of midwives, and hundreds of deaths of both mothers and infants are directly chargeable to such incompetent attendants to say noth-

ing of the thousands of invalided women, and blind, maimed and idiotic children directly chargeable to the same.

How can this deplorable state of affairs be improved? How shall the poor ignorant women be better cared for? They have a right to better care for the preservation of their lives and health; their children also have a right to life, health and happiness. What is the remedy? The State should protect them. The State protects its citizens from all contagious disease so far as possible, and protects the sick against the dangers of the ignorant physician by requiring him to show his competency to the satisfaction of the legally constituted authorities before he is permitted to take charge of the health of its citizens. Why make an exception of the ignorant midwife? Is it for the purpose of securing to her, because needy, the small fee for which she attends such cases? If so, it is poor economy to permit the murder of the women and their babes to feed the poor. Better send them to the alms house. Is it to secure their services to the poor who are not able to secure the services of a competent physician? If so, again poor economy. Had better pay a competent person out of the public treasury for such service than permit the poor women and children to suffer and frequently die to save expense.

I have naught against the competent midwife and would not have her deprived of her right to practice her profession. She can fill most acceptably a great need in our State. But a field she has infected. I will ever remember a case of puer-
should provide the means for acquiring such knowledge and require all midwives to demonstrate its possession before a competent board of examiners before they are permitted to enter upon the work of their profession.

Such knowledge would place the midwife on a much higher level, secure for her better fees and for the patient by far better service, help prevent over crowding our Blind Asylums,

State Hospitals and alms houses and save much suffering and many lives.

The last Legislature passed a law giving the County Boards of Health of the several counties the power and right to enact and enforce such rules and regulations as may be necessary to the licensing, registration, and control of all midwives.

This power may not be known and certainly is not acted upon by a vast majority of the County Boards of Health. It is the duty of every County Society and Board of Health to see that such rules and regulations are made and enforced; a duty we owe to the suffering women and helpless babes, to the citizens of our State.

They would be in the direction of progress and the uplift of our commonwealth and in exact accord with the altruistic principles of our profession.

"A Plea for Better Obstetric Work," Dr. J. W. Neal, Monroe.

Dr. David Garrison, Gastonia: *Mr. President*: I think it is the most gratifying thing in this State Society—preventive medicine. The essayist's paper was entirely preventive or on that line. I am glad to see we have gotten up to it. An ounce of prevention is worth a pound of cure, I have always held; and he has attacked the midwife, which is absolutely just. The most ignorant class of people that I have ever come in contact with in my life are the common midwives of this country. They have not studied it nor have they any idea of the anatomy of the parts. I believe, in my candid opinion, they are practically a necessary evil among us. There is a class of people who do not feel that they are able to employ a physician, and they have to have somebody, and whoever claims to do this work they send for. They claim to do so and so, but we know that they cannot. This thing has been

tried out in various cities, to eliminate them from this work, but it has failed. It has been an absolute failure in New York City, where they have a lying-in hospital of possibly six hundred beds or more. I was through it a few months ago, and the doctor who was in charge said that they were often called out for women who were in labor under midwives, to bring them in there. They are carried in there by the ambulances and they stay until they are able to get out, all free of charge, but they say that they are too nice and clean, and they don't want to go there. They would rather have this filthy woman to deliver them, and they go on and have septic fever and have to go into some hospital. Baltimore has failed and other cities have failed. I don't see how we are going to get rid of it. The class of women who are doing this class of work in this country today are fast dying out, the younger ones are not taking it up, and the only thing I see is to educate them, and if we have to have some one the trained nurse, I think, comes in there, trained along these lines. They are taught the anatomy of the parts, and practically every one who goes out of the hospital after three or four years' training knows something about obstetrical work. But the idea of a Board to examine them and see that they are fit, and a law passed for that purpose,—how are you going to manage it? Will our courts take care of them? I don't think so. They will say we went in there voluntarily. They are not vicious people—unless you do something to them. Say this one did so and so. The child was born feet foremost, and you say that old midwife did not know what she was doing, and the courts are not going to touch them, because they say "We are not charging a cent for it." They have been here for thousands of years, and they are going to stay here, unless we can educate some people up to it. But when a city like New York absolutely fails, and has this lying-in hospital

that all are free to go to, and then will not accept it, what is North Carolina going to do?

I think it is practically a thing that we have no power to work out, at this present time.

Dr. Rankin: I want to tell Dr. Garrison what I think North Carolina is going to do, and I want to tell him the only solution of the midwife problem that I know of. North Carolina, some day, is going to catch up with the procession and have a vital statistics law. North Carolina will require the registration of births, and on each birth certificate will be written the mother's name, and the attendant at the birth, midwife or physician, and something like 75,000 of these certificates will find their way to the registrar's office in Raleigh each year. The statistics can then be compiled, showing the number of children delivered by midwives and physicians respectively, and the number of deaths and the number of cases of opthalmia neonotorum among both classes of children and mothers. You will then have the truth turned loose among the people and that will solve the midwife problem.

Dr. Faison, Charlotte: *Mr. Chairman*: I agree with what Dr. Rankins says, and I also agree with what Dr. Garrison says: that they were here when we came and they will be here when we go away. You may go down and think you are going to get a law passed; you may say today that you had 100 sheep and the dogs killed them,—and you will still have the dogs. Next to the dog will stay the midwives.

Dr. Stanton: I just want to tell Dr. Garrison how he can eliminate the midwife in his community. When Dr. Rankin distributed to the towns of North Carolina of 1,000 population the certificates for death registration and the quarantine of certain diseases, I happened to be the health officer of my

city, so I went a step further and issued the order that all births should be sent to me. It had a very salutary effect upon our midwives. They found out that there was something a little peculiar that they had never had to do before that now was done. That was brought about by a midwife attending a young woman in a family where I had formerly practiced. Something went wrong and I was called in, and a few minutes afterwards the young mother died from post partum hemorrhage. I used some non-Sunday school language about this kind of practice, and this old midwife came to me and said, "Boss Doctor, if you won't kill me this time, I won't do it again." I said, "I won't kill you, but the next time you will have to go to the roads." So that had a salutary effect.

Taking advantage of Dr. Rankin's entering wedge, it is working well, and I do not think there is a midwife practicing in my community today.

ELECTION BOARD OF EXAMINERS FOR NURSES.

Dr. A. B. Croom, of Maxton, nominated.

Dr. J. W. Neal of Monroe, nominated.

Nominations seconded and Secretary instructed to cast unanimous vote of the Society for Doctors Neal and Croom as members of the Board of Examiners for Nurses.

Moved by Dr. Faison that the Society hear the report of the House of Delegates and proceed to the business consequent thereto.

Motion carried.

Report read.

Hendersonville, N. C., June 18, 1912.

The House of Delegates met in the ball room of the St. John Hotel at 2:30 p. m.

The President, Dr. A. A. Kent, of Lenoir, called the meeting to order, and the Secretary, Dr. D. A. Stanton, of High Point, called the roll, the following Counties being represented by members:

Alamance—J. M. Thompson.
Anson—
Beaufort—
Buncombe—F. T. Merriwether, E. B. Glenn, L. B. McBrayer.
Brunswick—J. Arthur Dozier.
Burke—I. M. Taylor.
Bertie—

At this point, it was moved and seconded that any member from a County where there was no regular delegate present, be accepted as representing that County.

Motion carried.

Craven—
Cumberland-Hoke—
Caldwell—
Caswell—
Cabarrus—D. G. Caldwell.
Carteret—K. P. B. Bonner.
Cherokee—N. B. Adams.
Cleveland—
Columbus—H. B. Maxwell.
Davidson—C. A. Julian.
Durham—Jos. Graham.
Davie—
Forsythe—H. T. Bahnson.
Franklin—
Edgecombe—
Gaston—J. A. Anderson.
Guilford—J. A. Williams, J. T. J. Battle.
Green—J. H. Harper.
Hyde—
Henderson-Polk—A. B. Drafts.
Harnett—J. L. McCoy.
Haywood—J. Howell Way.
Iredell-Alexander—Thos. E. Anderson.
Lenoir—J. M. Parrott.
Lincoln—
Lee—J. P. Monroe.
Mecklenburg—J. Q. Myers, I. W. Faison.
Mitchell—C. A. Peterson.
McDowell—
Martin—
Montgomery—E. H. Bowan.
Madison—S. B. Woody.
New Hanover—E. S. Bullock.
Onslow—J. L. Nicholson.
Pender—
Pamlico—
Pacquotank—Oscar McMullan.
Person—R. S. Baynes.
Rockingham—
Richmond—W. F. Howell.
Randolph—T. I. Fox.
Rowan—C. M. Poole.
Rutherfordton—W. C. Bostic.
Surry—
Stokes—A. G. Jones.
Scotland—W. D. James.
Roberson—A. B. Croom.
Sampson—J. M. Cooper.
Stanley—
Vance—E. F. Fenner.
Tryansylvania—
Union—H. D. Stewart.
Wayne—W. H. Smith.
Warren—C. H. Mackin.
Washington-Terrell—
Wake—R. H. Lewis, W. O. Abernathy.
Wilson—M. M. Salliba.
Yadkin—A. M. Royal.
Granville—S. D. Booth.
Pitt—Chas. O'H. Laughinghouse.
Cumberland-Hoke—W. S. Jordan.
Johnston—Dr. Rose.

THE SECRETARY: We have the best representation I think we have ever had.

THE PRESIDENT: I am glad that the representation is so good. The next business is the election of the nominating committee. Give me your attention so that I will make it clear how you choose your nominating committee. Each Councillor District is entitled to one member of the nominating committee, and if your Councillor is present, the delegates from that District will assemble with the Councillor. If the Councillor does not happen to be present, let some man representing any County in that District call the members from that District to him, so that your Councillor District will get together and choose your member for the nominating committee, and after

they are assembled, your spokesman will announce what your choice is.

Now I will adjourn five minutes for you to get together.

* * * * * * * *

The President called the meeting together after the five minutes' adjournment.

Dr. Faison: I move that the roll be called for the report.

The President: The delegates will please resume their seats and come to order. Mr. Secretary, call the list by numbers.

You will announce your choice.

The Secretary:

First District—Oscar McMullan.
Second District—K. P. B. Bonner.
Third District—J. L. Nicholson.
Fourth District—M. M. Saliba.
Fifth District—A. B. Croom.
Sixth District—R. H. Lewis.
Seventh District—J. Q. Myers.
Eighth District—H. T. Bahnson.
Ninth District—T. E. Anderson.
Tenth District—J. Howell Way.

The President: Mr. Secretary, please read over the names of the Nominating Committee.

The Secretary: Oscar McMullan, K. P. B. Bonner, J. L. Nicholson, M. M. Salliba, A. B. Croom, R. H. Lewis, J. Q. Myers, H. T. Bahnson, T. E. Anderson, J. Howell Way.

The President: Gentlemen, you have heard the report for the different Councillor Districts. I believe the usual order is to elect it as a whole. I will be glad to hear a motion.

A. Member: I move they be elected.

A Member: I second the motion.

The President: All in favor say Aye. The Ayes have it, and they are elected.

A MEMBER: I move that we adjourn to meet again Thursday morning.

A MEMBER: I second the motion.

DR. MCBRAYER: As I understand, the matter of passing a constitutional amendment is to come before this body, and I would suggest that each member of the House of Delegates be furnished with a printed copy of the amendment.

THE SECRETARY: It has been furnished to them.

THE PRESIDENT: It has been moved and seconded that we adjourn.

DR. FAISON: I move that we meet at 2 p. m. tomorrow to discuss this amendment.

DR. MCBRAYER: Gov. Kitchin is to address the Medical Meeting at that hour, and the next Governor is also to address the Society at that time, and I don't think we would want to take out all this part of the Society at that time. Make it tomorrow night.

A MEMBER: What is the objection to taking it up now.

A MEMBER: I move that we take up the consideration of the amendment of the Constitution and By-Laws at present.

A MEMBER: I think we had better put it off until tomorrow to consider it.

DR. FAISON: I make the motion that we meet Thursday morning at 9 o'clock to consider it.

A MEMBER: I second the motion.

THE PRESIDENT: All those in favor make it known by saying Aye. The Ayes have it. It has been moved and seconded that we adjourn. All in favor say Aye. We will now take an adjournment to meet again Thursday morning at 9 o'clock.

The House of Delegates met in the Ball Room of the St. John Hotel, Hendersonville, N. C., June 20th, 1912.

THE PRESIDENT: The House of Delegates will please come

to order, and we will take as the first matter of business the report of the Secretary.

Secretary reads report:

Hendersonville, N. C., June 18, 1912.

MR. PRESIDENT AND GENTLEMEN OF THE HOUSE OF DELEGATES:

In submitting this, my Sixth Annual Report, it is with the knowledge that the Medical Society of the State of North Carolina is today in the best condition it has been since I was elected its Secretary. One year ago I was in a measure pessimistic as to the future of our Society, but today I can confidently say it is stable and I see nothing to make us feel but that greater success awaits our efforts as an organization than at any time since I have been your Secretary. I have on file today a greater number of county reports representing a larger membership than any previous year, at the time of our annual meeting. This increase in county reports and membership, I credit to the activity and interest of the ten Councillors, while this work is one of love, each has been active and the reports should be gratifying to the Councillors personally, as well as to the Society.

The healthy condition of the Society today proves the wisdom of the House of Delegates in the selection of the men who fill these offices and proves what we have often heard said that the Councillors are the most important officers of the Society.

One year ago you left the style of printing to my judgment, after considerable correspondence with three different printing firms I made a contract that I felt to justify my risk in the job to be in keeping with the style for the past several years. I leave you to judge as to whether I did right or wrong. I am glad to tell you the work is paid for and we have money in the treasury.

I would remind you that my second term of office expires with this meeting and my successor must be elected, also the two members are to be elected at this meeting to serve on the examining board for nurses, also two delegates for the A. & M. A. for two years and their alternates.

I cannot close this, my last meeting, without expressing the pleasure it has been to be your servant for six years. The office of Secretary is one of honor and sacrifice, but to one who loves the profession, the duty of service becomes a pleasure. I wish for the Society under the management of a new Secretary greater success than it has enjoyed for the past six years. The benefits to the State from the medical pro-

fession is being appreciated more each year, and the services which the medical profession can render to the commonwealth is more than the profession itself realizes.

Respectfully submitted,
D. A. STANTON, Secretary.

THE PRESIDENT: Gentlemen, you have heard the report of the Secretary; what will you do with it.

A MEMBER: I move it be accepted.

A MEMBER: I second the motion.

THE PRESIDENT: All in favor of accepting the report, will signify it by saying Aye. The report is accepted.

A MEMBER: I move that the sincere thanks of the Society be tendered our retiring Secretary for his faithful services.

A MEMBER: I second the motion.

THE PRESIDENT: Gentlemen you have heard the motion. All in favor of the motion signify it by saying Aye. It is unanimously adopted.

The next thing is the report of the Councillors.

DR. M. L. STEVENS: I submit the report of the Councillors:

Reads report.

REPORT OF BOARD OF COUNCILLORS.

Asheville, N. C., June 19, 1912.

In the past year more work has been done by the Board of Councillors as a whole than in any recent previous year. The details of this work will be presented in the separate reports from the various Councillor Districts. Nevertheless much work still remains to be done. There are still more Counties that have no County Societies, and in many Counties that have well organized Societies there are still physicians who have not united with them. Proper effort is being made to bring about these ends.

There is one matter that the Board of Councillors desires to bring before the House of Delegates, together with recommendation as to action concerning same. Macon-Clay Counties in the Tenth Councillor District had an organized County Society which has disbanded because of a feeling on their part that they have a grievance against

the State Medical Society. This grievance expressed in the writing of a prominent physician of the County is as follows:

"This Society feels that it has been badly treated by the State Society in the matter of dues, and therefore has disbanded. Until this matter is straightened up and the Macon-Clay Society treated fairly, it will be utterly impossible to organize a Society in Macon County during the life of any of the present members.

"When our Society was first organized in 1903, Dr. Rogers was elected Secretary, and under the regulations collected $2.00 each from the old members of the State Society (two), and $5.00 each from the new members. Not knowing the law in the case, he sent $19.00 in to the State Treasurer and was sent a receipt. That year I was a delegate to the Society and when I asked for my badge at the meeting, was told that I would have to pay dues for our County, amounting to $10.00, and not having a receipt with me there was nothing to be done but to pay them. When I returned home Dr. Rogers could not lay his hands on the receipt at once, and in the meantime by the time he had found his receipt I had lost mine and the matter drifted along this way for several years. Finally we found both receipts and sent them in and asked that $19.00 be applied on our dues, which was refused. Now we feel that the State Society was responsible for the acts of its treasurer, and until this money is refunded we do not care to affiliate with that body."

The Councillor for the District is convinced that all efforts to re-organize the Society will be futile until such action is taken by the House of Delegates as will place ourselves right in their eyes. Therefore, the Board of Councillors by a resolution unanimously carried recommend that the House of Delegates authorize the Treasurer of the State Society, in exchange for satisfactory evidence of the alleged payment, to credit the Macon-Clay County Medical Society with, or refund to it as may be preferred by them, the amount which they claim to have paid under the above mentioned conditions.

M. L. Stevens, President,
K. P. B. Bonner, Secretary.

Gentlemen: I wish to say that there is a need of something in this district to arouse interest in the society work. It may be that a better Councilor is needed or perhaps something to arouse his interest to more efficiently perform his duty. This I promise you I am going to find out which dur-

ing the coming year, as I am determined to see if the Third District can't come up to the best if not *the* best in the State.

If a better Councilor is the standing need then you will have the pleasure of accepting my resignation next year, and if we can do anything to better our standing and show to you and the world our professional pride and interest then you will hear from us next session of the meeting.

I have visited one County Society, Onslow, and my own County of course would be two in the district and have had letters from Bladen and Duplin. All the rest of my district have refused to co-operate with me yet even to answer my letters.

So far as I am able to learn there is not the interest in the County Medical Societies that there should be and that I believe could be aroused, if the proper steps were taken. We hope to organize a district society during the coming year and to visit some of the County Societies and place some matters of business before them that will, I think, help to arouse interest at home and in the district at large.

To this end I think the State Society might greatly aid in keeping better interest and more general satisfaction and contentment if they will and for this purpose I wish to offer the following resolution for your consideration.

RESOLVED 1st, That the Transactions be published and distributed to the respective members of the Society not later than October 1st, next, after the State Society Meeting.

RESOLVED 2nd, That the Transactions contain a full and itemized report of our treasury, showing explicitly the recipts wherefrom and the disbursements and whereto. This complaint has come to my attention very generally from all sections and we believe it only just and right for this information to be given annually for the benefit of all concerned.

Yours very truly,

G. L. SIKES.

A MEMBER: That would be how much?

DR. STEVENS: $19.00.

A MEMBER: What about their dues for that year?

DR. STEVENS: They have disbanded, there are no dues.

SECRETARY: I remember some correspondence with those men about that very thing.

PRESIDENT: Are you satisfied an injustice was done through the Board of Councilors?

DR. STEVENS: I am satisfied that in the minds of the members of that Society there is a feeling that an injustice has been done. The fact that the receipts could not be found for a time let the matter go over two or three years. Meanwhile, it is probable that the dues had accumulated, and the Treasurer thought that amount was due, but they had disbanded.

PRESIDENT: Notifying the Secretary to that effect?

DR. STEVENS: I don't know. I do know that until we get the matter straightened up that they will never be members of the Society. I think that disregarding all merits of the case, we need to set ourselves right. They are worth something to us and we are worth something to them.

A MEMBER: I move that a settlement satisfactory to those gentlemen be made by the Treasurer. I move we accept the report.

A MEMBER: Second the motion.

PRESIDENT: All in favor of the motion as made signify it by saying Aye. The report is accepted.

DR. BAHNSON: I move that such sum be refunded or applied to the dues as will be satisfactory to them, provided that they become members of the Society. I would like the matter to be adjusted, whether by payment back and they pay their dues, does not make a difference.

DR. I. M. TAYLOR: I move as an amendment that the matter of a settlement be made through the Councilors of the District.

DR. BAHNSON: I accept the amendment.

PRESIDENT: Any discussion?

DR. MCBRAYER: We can not hear what is going on.

DR. ADAMS: Gentlemen, I have met several members of the Macon County Society and have had a talk along this line. A few months back, I met one of the most prominent members, and he told me that this is true, and told me that they felt hurt, and they wanted to be members of the Society and wanted to work in the Society, but he felt that until this was cleared away that they could not become members of the State Society, therefore I shall heartily vote for that motion.

PRESIDENT: Any further discussion? The motion is that the money be refunded, that a settlement satisfactory to this County Society through the Councilors for that district, provided they return to the fold.

A MEMBER: That part of the measure I am everlastingly and eternally opposed to. Let us do right, and leave it to them and their conscience.

DR. MCBRAYER: It looks to me like the Councilor has ample authority to do whatever he wants to.

SECRETARY: $19.00 is all.

DR. MCBRAYER: There is nothing said about $19.00.

A MEMBER: I understand that they were to make a settlement in accordance with the report.

PRESIDENT: All in favor of the motion will say Aye. The motion is carried. We will now hear the report of the Councilor of the First District. He is not present. We will hear from the Second District.

DR. BONNER: My report will not be at all lengthy at this time, from the fact that this is the second year of my having charge of the Second District. I tried to do my best work in my first year in order to get the district in as good shape as possible, which I think I succeeded in doing, but I would like to say that I think our County organizations are in better shape and have improved as a whole than at any time previous. I will say that we have a very good and earnest district So-

ciety meeting which is accomplishing fine work, and I believe it will strengthen the County organizations. That is all I have to report.

A MEMBER: I move that the report be accepted.

A MEMBER: Second the motion.

PRESIDENT: All in favor signify it by saying Aye. It is accepted. We will now hear from the Third District, Dr. Sikes. He seems to not be present. We will hear from the Fourth District, Dr. M. M. Saliba.

A MEMBER: There is a report from Dr. Sikes here I think, in the hands of the Secretary.

SECRETARY: I have not got it.

A MEMBER: Dr. Sikes has sent in a very favorable report. If not already in the hands of the Secretary, I will ask to turn it over to the Secretary.

PRESIDENT: Make a motion to that effect.

A MEMBER: I will second the motion.

PRESIDENT: All in favor of the motion will say Aye. The motion is carried.

DR. SALIBA: It is my first year in the Councilor work, and the first thing I did was to follow the footsteps of those who started the work before me, and the result we have is from what my predecessors had planned. We have very good work in the County Societies,—some of them. Some of them we have not yet organized. We are proud of two things. One is the very good, active County Societies, and another is one of the most active District Medical Societies in the United States. We have in the Fourth District, four district Medical Society meetings a year. Our attendance is over 60%. We have an average of from 60% to 75% attendance. (Applause.) At every meeting we select the place and subjects for the next meeting, then divide the subjects and select men to fill those sub-divisions. We have very good success with it and have very good attendance. Our County Medical Society we

started a new plan. We have a programme committee, which selects the subjects for one year, take up the new parts of medicine, not the old things which every one knows. Then we have a man who reads a paper, and another the discussion. Those things will be printed on a card, such and such a meeting, such and such a subject, with a man to read a paper and another to discuss it. We have another committee which is on new things in medicine. We appoint a committee for three months, which will report at each meeting what they have seen new in medical lines, and I think in a short time we will have one of the most active Medical Societies in this State or anywhere. (Applause.)

PRESIDENT: All in favor of the acceptance of this report signify it by saying Aye. The report is accepted. Now the Fifth District, W. P. Holt. He seems not to be present.

SECRETARY: Sixth District, I have Dr. Felts' report.

DR. CROOM: Before you pass over the Fifth District, I would like to ask if you have any word from the Secretary?

SECRETARY: No.

DR. CROOM: I would like to say our district is in good shape, we have good County Societies; we have a good District Society, but not so good as the Fourth. We have been proud of our district, but I don't think our attendance will run more than 15% or 20%. Our County Societies are well organized.

PRESIDENT: We are very glad to have that kind of reports coming.

SECRETARY: (Reads Dr. Felts' report.)

Durham, N. C., June 17, 1912.

TO THE SECRETARY NORTH CAROLINA MEDICAL SOCIETY,
HENDERSONVILLE, N. C.:

Sir: I have the honor to submit the following report from the Sixth Councilor District.

Number Counties in this District..... 10
Number Counties organized..... 8

Number Counties not organized 2
But attend District Meeting
Number Counties submitting a report to me 7
Total Number Physicians registered in Counties reporting 173
Total Membership in Counties reporting 149
Total paying dues regularly 145
Interest growing in County Societies 6
Interest at stand-still 1
Interest growing in State Society 6
Interest waning in State Society 1

I want to say that the interest in the District Society is decidedly on the increase. Our annual meeting was held in Durham on April 26, 1912, with the best attendance we have ever had. The scientific program was especially good, every paper being read and freely discussed.

Very respectfully,
ROBERT L. FELTS,
Sixth District Councilor.

PRESIDENT: You have heard the report from the Sixth District. All in favor of its acceptance will signify by saying Aye. It is accepted.

DR. ADAMS: You did not pass on the Fifth District.

PRESIDENT: Dr. Croom made a report and I think that should be accepted as any other report?

DR. CROOM: I should like that to be done.

PRESIDENT: All in favor of Dr. Croom's report being accepted as that of the Fifth District will signify it by saying Aye. The report is accepted.

SECRETARY: Seventh District:

A. J. CROWELL: I am sorry I am not able to make as good report as Dr. Saliba. I am sure he has the banner when it comes to reports from the district. The report of 7% or 8% of the membership being present at the District Society meeting I think is really very pitiful. However, we think we are doing very very good work in the Seventh District. Two years ago, when I was elected District Councilor, I got busy to organize District Society meetings, until we have

had at one meeting twenty-four papers read, and last time twenty-six, and they were all read and the papers splendidly discussed. These two Society meetings were the best from the scientific standpoint I believe I have attended. They come there and sit and listen at the papers and discuss the papers from early morning to late at night. All our Counties are organized,—nine Counties. I have reports from eight of these Counties, written reports, and the only complaint we have from any of them was, I believe, from Union County, and it is not gloomy, but the question is men practicing medicine in the County without license. The report is that some are practicing without license under the supervision of licensed physicians. Another is that the border line physicians are practicing without license. I suppose they have license in South Carolina. That is the nearest a complaint of anything I have to report. The Society seems to be in good working order. The meetings are monthly, semi-monthly, and some, I believe, meet every two months. I have visited every County in my district once, and several of them twice, and I want to assure you that some of them are doing real fine work in papers and clinics.

A MEMBER: I move that the report be accepted.

A MEMBER: I second the motion.

PRESIDENT: All in favor of accepting the report will signify it by saying Aye. The report is accepted.

SECRETARY: Eighth District, I have a telegram from the Councilor, R. O. Dees. (Reads Telegram.)

Greensboro, N. C., June 17, 1912.

Dr. James M. Parrott,
North Carolina Medical Society,
Hendersonville, N. C

Eighth Councilor District in fine shape. Progress and harmony the motto. Successful district meeting in March, with

attendance by members from most of the Counties. Please make report to House of Delegates and oblige,

Your friend,

R. O. Dees.

President: You have heard the report of the Eighth District.

A Member: I second the motion.

President: All in favor of its acceptance signify it by saying Aye. It is accepted.

Secretary: Ninth District, D. J. Hill

Dr. Hill: So far as the County Societies in my district, with one or two notable exceptions, it has not been active. I desire to state with pleasure and pardonable pride that through the assistance of my illustrtious predecessors and other eminent men in my district, we succeeded in organizing the district, which has never been done before; had a very delightful and instructive district meeting, and we have officers of the District Societies now who will be sure to pull the district to a successful footing. The most regretable thing in my report is that in one or two Counties, we have never been able to organize a County Society. To the best of my information, there are in one or two of these Counties, doctors with limited license, and in these Counties where you have one or two doctors with limited license, it is hard to do much with them.

President: All in favor of accepting the report as made by Dr. Hill will say Aye. The report is accepted.

Secretary: Tenth District.

M. L. Stevens: In the Tenth District, conditions are fairly satisfactory, and better than they were a year or two ago. We have in the district perhaps the strongest County Society in the State. We still have three Counties that have no organized Societies. These Counties are not organized because there are so few physicians in them that it has been impossible

to get together enough men to constitute a well working Society. I have advised the physicians in these Counties to meet with the Society in the most convenient County, thinking that is the best plan to bring them into the Society. I suppose the conditions are satisfactory.

PRESIDENT: You have heard the report of the Tenth District. All in favor of accepting it say Aye. It is accepted. We will now hear the Treasurer's report.

SECRETARY: (Reads report.)

TREASURER'S REPORT.

Amount on hand June 21, 1911	$1,330.29
Amount collected to date	2,001.00
Interest	26.56
Total	$3,357.85
Disbursements	1,985.84
Amount on hand June 18, 1912	$1,372.01

H. D. WALKER, Treasurer.

The above report we find correct.

H. D. STEWART,
C. O. ABERNETHY,
Auditing Committee.

Hendersonville, N. C., June 18, 1912.

SECRETARY: I should have said in reading my report that the increase of membership has been 150 this year, which I think is a very creditable showing.

PRESIDENT: You have the report of the Treasurer, and also its approval, which amounts to a report of the auditing committee, and I will put the acceptance of both in the same motion.

A MEMBER: I move it be accepted.

A MEMBER: Second the motion.

PRESIDENT: All in favor of the acceptance of this report as being the report of the Treasurer and Auditing Committee will say Aye. It is accepted. The report of committees is

next, and we will hear the report of the Nominating Committee.

DR. BONNER: (Reads report of Nominating Committee.)

The Nominating Committee met in the jury room in the Court House at Hendersonville, at 10:30 a. m., Wednesday, June 19th, 1912.

Those present were:

First District—DR. OSCAR MCMULLAN, Elizabeth City.

Second District—DR. K. P. B. BONNER, Morehead City.

Third District—DR. J. L. NICHOLSON, Richlands.

Fourth District—DR. M. M. SALIBA, Wilson.

Fifth District—DR. A. B. CROOM, Maxton.

Sixth District—DR. R. H. LEWIS, Raleigh.

Seventh District—DR. J. Q. MYERS, Charlotte.

Eighth District—DR. H. T. BAHNSON, Winston-Salem.

Ninth District—DR. T. E. ANDERSON, Statesville.

Tenth District—DR. J. H. WAY, Waynesville.

The Committee organized by electing Dr. R. H. Lewis President, and Dr. K. P. B. Bonner Secretary. After careful and considerate deliberation the Committee beg leave to report as follows:

OFFICERS

President—DR. J. P. MUNROE, Charlotte.

First Vice-President—DR. FLETCHER R. HARRIS, Henderson.

Second Vice-President—DR. E. S. BULLOCK, Wilmington.

Third Vice-President—DR. L. B. MORSE, Hendersonville.

Secretary (three years)—DR. JNO. A. FERRELL, Raleigh.

Treasurer (three years)—DR. H. D. WALKER, Elizabeth City.

Orator—DR. H. D. STEWART, Monroe.

Essayist—DR. J. T. BURRUS, High Point.

Leader of Debate—DR. J. H. HARPER, Snow Hill.

Dr. R. H. Lewis of Raleigh was unanimously renamed as Chairman of the Committee on Public Policy and Legislation but declined the position on account of a press of work. He recommended that Dr. Albert Anderson be substituted in his place and the following gentlemen are recommended to compose the Committee on Public Policy and Legislation. Dr. Albert Anderson, Raleigh; Dr. G. G. Thomas, Wilmington; and Dr. L. B. McBrayer, Asheville.

Committee on Publication—Dr. Jno. A. Ferrell, Raleigh; Dr. J. Howell Way, Waynesville; and Dr. H. A. Royster, Raleigh.

Committee on Scientific Work—Dr. Wm. DeB. MacNider, Chapel Hill; Dr. William Allen, Charlotte; and Dr. E. J. Wood, Wilmington.

Committee on Finance—Dr. C. O. Abernethy, Raliegh; Dr. H. M. S. Cason, Edenton; and Dr. E. T. Dickinson, Wilson.

Committee on Obituaries—Dr. E. G. Moore, Elm City; Dr. A. W. Knox, Raleigh; and Dr. M. L. Stevens, Asheville.

Chairman of Committee on Arrangements—Dr. K. P. B. Bonner, Morehead City.

Place of Meetings 1913—Morehead City.

Delegates to South Carolina Medical Association—Dr. Arthur Guerard, Hendersonville; Dr. Albert Anderson, Raleigh; and Dr. J. J. Phillips, Tarboro.

Delegates to Virginia Medical Association—Dr. H. T. Bahnson, Winston-Salem; Dr. Oscar McMullan, Elizabeth City; Dr. W. H. Smith, Goldsboro.

Delegates to American Medical Association—Dr. J. Howell Way, Waynesville; and Dr. H. A. Royster, Raleigh. Alternates: Dr. W. L. Dunn, Asheville; and Dr. R. DuVal Jones, New Bern.

PRESIDENT: Before putting the question of its acceptance, I think I noticed one omission. Did you fix the time of meeting?

SECRETARY: That was fixed two or three years ago regularly each year as the third Tuesday in June.

A MEMBER: I move the adoption of the report.

A MEMBER: I second the motion.

PRESIDENT: The adoption of the report is moved and seconded. This report is always open for further motions. No further nominations for any of the places, I put the question. All in favor of its adoption say Aye. It is unanimously adopted. Any communications from the general meeting?

SECRETARY: No.

PRESIDENT: Any new business?

DR. BONNER: There is one thing I omitted from that report, and I would be glad to have that incorporated, and that was that the Secretary was instructed to report to the House of Delegates that it was the sense of the Nominating Committee that the meeting in 1914 should go to Raleigh on account of that being a central point and that year being the election of a Board of Medical Examiners, as well as the usual

officers, and its being most convenient to all men from all parts of the State. That was to be engrafted. If there is no objection I would ask that the report be so amended in the adoption.

Dr. Faison: I think we are putting the finger in a pie which we have no right. I am in favor of going to Raleigh, but I don't think this Society this year ought to say what the Society next year ought to do.

Dr. Bonner: The Nominating Committee after doing a good deal of hard work, feel that they ought to have this much consideration at the hands of the Society; they have their reason for going to Morehead next year, and then to Raleigh. It does not bind the Society, and we humbly beg that no objection be made.

Dr. Crowell: It simply expresses a sentiment in favor of going.

Dr. Bonner: That is all.

Dr. McBrayer: It is impossible for the House of Delegates or this committee to bind the Nominating Committee of next year. We are satisfied with the work of the Nomoinating Committee, their work is well done. The next Nominating Committee may be composed of the same men but will be a different committee.

President: I will have to rule that a motion will be necessary in order to incorporate it.

Dr. Abernethy: The Nominating Committee have a right to recommend anything they see fit, and I move that the Nominating Committee's recommendation be accepted. I wish to speak to the delegates. I happened to be very active in the recommendation, in trying to get the meeting to Raleigh next year. I also happened to be defeated in that, and it gives me great pleasure to take that defeat gracefully, and I think that the committee has a right to recommend anything that they see fit. It is up to the House of Delegates to accept or not.

There has been no restriction made on the Nominating Committee's recommending anything they see fit. Therefore, I move that this recommendation be accepted, that they respectfully submit to the next year's Nominating Committee that they accept the invitation of the humble city of Raleigh to meet there in 1914.

Dr. McBrayer: I move that on the second year following this, that we recommend that the Society meet in Murphy and the third year in Mattamuskeet.

Dr. Faison: I am here to say that if I had been on the committee I should have voted to go to Raleigh, but who says that they have a right to recommend anything else. They might recommend that we call the Republican Convention down here four years from now to nominate the President. This Society next year will meet for the purpose of transacting all this business, for the purpose of selecting a place to meet next year, and it is just poking our fingers into a pie we have no business to put them in. It will be better to eat next year.

President: The question is called for. All in favor of the motion as made signify it by saying Aye. All opposed No. The Noes seem to have it. The Noes have it. Any new business?

Secretary: I do not know of any.

President: Any unfinished business?

Secretary: There is one matter of unfinished business we will take up now. That is the adoption of the Constitution and By-laws submitted at the 1911 session.

President: What will you do with it?

A Member: I move it be adopted.

President: The matter before us is the adoption of the Constitution and by-laws which was submitted at the session of 191 and which has been duly reported to the County

Medical Societies and is now up for consideration and acceptance.

A MEMBER: I move its adoption.

DR. CROOM: I move that this be taken up by sections. As I understand that is the only proper way.

PRESIDENT: Moved that it be taken up by sections. Is there any second?

A MEMBER: I second the motion.

DR. NICHOLSON: In view of the fact that under the present Constitution, the reports are so flattering, that the finances are so abundant, and that the Society is growing in every direction I move that the whole matter be laid on the table.

A MEMBER: I second the motion.

A MEMBER: It is out of order.

DR. PARROTT: Without expressing my opinion as to the present organization, I think Dr. Nicholson's motion ought not to be acted upon. It is a motion to table and is not open for discussion. It is a matter of such importance that we ought to be placed in a position to discuss the matter. I am inclined to second Dr. Nicholson's motion, but I would like to have the pleasure of listening to the discussion. I would like to have Dr. Nicholson withdraw his motion and let us hear what they have to say about it.

DR. STEWART: As I understand this proposed amendment is to the effect that all officers of this Society be elected by the whole instead of being elected by two or three or four as it may be, and I wish to offer an amendment to this amendment to the effect that the meeting place of this Society be fixed by the entire Medical Society in a body. I wish to offer that amendment.

PRESIDENT: I think that would come up properly after we started into a further consideration.

DR. STEWART: It is open for discussion?

PRESIDENT: Yes.

Dr. Stewart: I might as well discuss it. I have no enmity against any member of this Society. I love every member of this Society, but I despise some of their ways worse than I do the devil. There is only one thing that I am concerned in in this Medical Society, and that is that all the members of the Medical Society of North Carolina may be brought together in one union, all working together with good feeling, no enmity, no wire-pulling, nothing but a Medical Society for scientific investigation, and for furthering the health interests of North Carolina.

A Member: And have a good time?

Dr. Stewart: Yes, that is thrown in, or was last night. How would you like to be elected President of the United States by ten men, would you accept it?

A Member: Teddy would.

Dr. Stewart: He would take it without being elected at all. I am in favor of a Democratic form of government and the word Republican means exactly the same thing. It means a rule of the people, the rule of the majority. If a majority of the Medical Society take a man and put him up as President, I would not have anything to say. I would be perfectly satisfied. It is not a question of who gets an office so much as how he gets it. It seems that some people are very ambitious for honor; it is all right for them to have honor,—but the way of getting these honors. If they distrust the whole people, and think that they are not going to vote for them, they are on the wrong line. There seems to be a distrust among certain individuals, they won't trust the whole body; they think "If it is brought to a vote, I won't get there." Before you will get a large attendance and harmony from the State and all working together for the best interest of the whole, you are going to have to cut out politics and commercialism. As long as the members want to use the Medical Society for some individual purpose, this Society is not going

to grow. I long for the day when these District Councilors can get every member in good standing with a license to come to the meetings and give him a hand in it, let him feel that he is one of them. I know how dissatisfied the doctors, I know what is keeping them away from here,—it is this "wire-pulling." It should not be in a Medical Society,—it belongs at Chicago or Baltimore. It don't belong in a Medical Society. This Nominating Committee of ten men came around and wanted to suggest me for Essayist. You know I feel like a fool representing nine hundred men at the suggestion of ten men. I was in a little County recently in a political convention. There was about twenty-five men there in a club, three of them in favor of Underwood, twenty-two in favor of Wilson. Three of our men got up and walked out without being sent and appointed themselves into a Nominating Committee, they came back and one says "Mr. Chairman, our township wishes to nominate so and so." I says "You don't do any such thing, without authority. Who sent you out? You are usurping the authority of twenty-five men. We have not had any vote on this thing." We put it to a vote and voted it down. The majority of them were Underwood men. They had no authority but deliberately got up and nominated themselves a committee of three, walked out and came back to make a motion. They didn't get it made. That is the way it ought to be in everything. I don't care who is President of this Society. I don't want to be unless nearly all of them wanted me. If there were two or three other fellows trying to get it, I would say "Let him have it, and put it in the Charlotte Observer, So and So elected President of the Medical Society for 1912, and put it in all the other papers." Cheap notoriety is the cheapest thing in the world.

PRESIDENT: I did not keep the time, but I think it is out.

DR. SIKES: I think we have an oil that will lend soothing

balm to the dissension. We have a substitute which we wish to offer in connection with the amendment offered last year.

Substitute for the Constitution and By-laws offered:

(Here reads the substitute.)

We offer this as a substitute to the long revised Constitution and By-laws offered last year.

PRESIDENT: The substitute is before you for adoption or not adoption in place of the original as offered by the committee.

DR. BAHNSON: I would like to amend as to the duties of the General Society to include Dr. Stewart's very wise and very proper statement in regard to the place of meeting. That should be added to the officers, etc., to be elected by the general Society.

DR. STEWART: I second it.

PRESIDENT: I think the thing to do should be to adopt that substitute as a substitute for the other and that will be up for consideration and can be amended at that time.

DR. BAHNSON: I move the adoption of the substitute.

DR. MCBRAYER: I want the members of this Society to have whatever they want. There was a gentleman came to me and said, about four years ago, that he heard my name mentioned for the Board of Medical Examiners. I appreciate the confidence the Society placed in me in electing me, and he said I think you could stand a better chance of election in the general session. I replied that if I could be elected in the House of Delegates and could not be elected in the general session I would not have it, and if I could be elected in the general session and could not be in the House of Delegates, I would not have it. This is the proposition we have up under this matter:—We are getting so many substitutes,—in this new draft the election of officers occurs on the last day of the session.

DR. SIKES: We changed that on purpose.

Dr. McBrayer: The election of the members of the Board of Examiners and Board of Health come on the second day, —and it looks to me like every time you elect a member of the Board of Health and Board of Examiners, you devote one day to that and one to the election of officers,—I want the members of this Society to have what they want. If they want to turn this Society over to a political organization and spend two days out of three in the election of officers, I am willing, but still we ought to go into it with our eyes open. Our President has recommended that we need another day already. If we want to devote two days to the election I am willing, but we ought to look at these things from two sides.

Dr. Bahnson: As I understand, there is nothing said about the time of election in this amendment.

President: I am in the awkward position of being on this committee, being put on the committee before I was elected President. It is embarrassing and involves some explanations as committeeman as well as presiding officer. I drafted this amendment and there was a very great desire that we have all elections on the last day, and I would have so drafted it, except others advised me that if you put the election in the House of Delegates on the last day, and of the general body on the last day, you will have a conflict of time. It is necessary to have one of the elections on another day, so I put the election in the House of Delegates on the second day. The election of the Board of Health, I think I made an oversight in that by not saying that that was provided for on the second day in the joint session, and it is my honest opinion that that ought to be corrected and that the election be where it has always been. I believe it ought to be so arranged. We could not have the election in the House of Delegates and the election in the general body on the same without a conflict of time, and for that reason I have arranged it otherwise. As a member of this committee, I feel that I know that there is a

very general desire for a change; that change to have been very much more sweeping than this compromise, and I have endeavored to the very best of my ability to bring the two extreme views to a meeting ground upon which both ought to be able to come together and stand and work harmoniously forever after this time, and feeling that way about it, I have drafted this, and earnestly ask that it be adopted, and that peace be brought to the Society which we love so much, and that in the future we shall all pull together for the common good of the profession and the people of this grand old State of ours.

Dr. Sikes: In the matter of this election, it simply takes the afternoon of one day and the forenoon of the next, so we only propose to engage in it twenty-four hours.

Dr. Faison: This sentiment that you have promulgated, and that of Dr. Stewart is pretty fine, it is good for babies and women, but it won't do for this crowd of men. I know and have known them for twenty-five years; I have been in this Society thirty-five years, and have never belonged to it for any five years that they did not want to change it. They want it changed now, they wanted it changed then and will want it changed five years from now. It is true that the law of the State of North Carolina says that this election of the Board of Health shall be held on the second day. Last year on the day of the election of President, there were hardly enough men there to second the motion. If you had put them in a little buggy I could have pulled them down hill. They found out what was coming and had gone home.

This House of Delegates, as it has a right to change, ought to fix it so as to have a meeting in keeping with the plans and reputation of the Medical Society. You can hardly get a paper read or discussed; have a hundred and twenty papers when you can not get but sixty read. You ought to have men that can write good papers and read them and discuss them.

I don't come here for any office. I won't have it. I am here for the purpose of getting away from home and hearing papers worth being read, getting new ideas, and getting the scales rubbed off my eyes. You can not go and hear a man read a good paper. There are more papers on this programme than could be read in a week. We ought to fix it so that a committee could pass on the papers and if they are not worth reading, throw them in the fire and put men on there who would fix a paper worth being read. That is what we ought to do. There are men here dreaming about an office a year from now, and they are going to dream and read and write about an office. I am opposed to this racketing. It has been a political organization from 1878 up to the present time. I will hear within a week from a man who wants something; I heard it last year and will hear it again.

Dr. Abernethy: I am with Dr. Faison on several propositions. I think the solution of this proposition is in who appoints the Nominating Committee. The Nominating Committee are handled by a few men. Some of them are not handled. The majority of them are. I move as a substitute for the election of officers that the election of officers be put in the House of Delegates without any Nominating Committee at all, and that the various officers of the Society be nominated by the House of Delegates and elected on the first day of the meeting. The thing to do,—I am not as old as Dr. Faison, but the young men in this Society don't come to it because they have no interest in it. We don't come to it because we don't hear any papers read that amount to much. The excellent paper last night was heard by about twenty-five men, and should have been heard by one hundred and fifty. If you take the election of these officers to the general session, you take a whole day out of the scientific meeting. The correction of this thing is to abolish the Nominating Com-

mittee, and elect the officers by the House of Delegates and I move that as a substitute.

MEMBER: The question.

PRESIDENT: The previous question is the adoption of this substitute for the amendment as offered a year ago. That is the question we are voting on, the adoption of the amendment as read by Dr. Sikes as a substitute for the other.

DR. ABERNETHY: The last substitute offered, has it had a second?

PRESIDENT: It did not have a second, and the previous question is called for.

DR. LEWIS: I rose to second the motion of Dr. Abernethy and wanted to state my views.

DR. ABERNETHY: I move that Dr. Lewis be allowed to discuss this.

A MEMBER: The motion was made before Dr. Sikes came in.

DR. CROWELL: He made a motion before the question was called for.

DR. FAISON: Can a man get up and ask for the question after a man has made a motion?

PRESIDENT: He has a right to call for the previous question at any time he pleases to. I want to make myself clear that Dr. Abernethy did make his motion but did not receive a second until after the question was called. This disposition of the substitute does not hinder your later making another amendment to this substitute in the event this substitute is adopted. If it is not adopted, then we come to the adoption or not adoption of the present amendment as offered. It does not absolutely shut you out. If this is adopted then you will still have your opportunity of amending that. If that is killed, then you will have your opportunity.

DR. ABERNETHY: I beg to differ. Your motion does not

follow until my substitute is offered. The substitute comes up last as it is offered.

Dr. Faison: Dr. Abernethy makes a motion, Dr. Croom seconds it, and does not have time until a man sitting ready calls for the previous motion. Does that stop that motion?

President: I don't want Dr. Abernethy to feel shut off.

Dr. Faison: Does your ruling rule that motion out of order?

President: Not if properly conditioned.

Dr. Faison: He made a motion and Dr. Croom rose to second it, and the man said "Previous question."

President: If the motion had been made previous to the calling for the previous question, then I would say he was in order.

Dr. Faison: He made the motion, Dr. Croom was in the act of getting up to second the motion and somebody hollered "Previous question," and I don't think he rose. Could he stop a second to a motion by a man that did rise.

A Member: I would like to know if any single individual has a right to cut off debate by calling for the previous question. Isn't it necessary that a certain proportion of the body should demand a previous question. That is a very unwise rule if any one man says "I move the previous question" and cut off debate. My impression was that there should be a certain proportion of the body demanding a previous question before it could be ordered.

President: I am going to put Dr. Abernethy's question and stop this discussion and wasting time.

Dr. Abernethy: I think it is up to this House of Delegates to consume a little time. This thing of railroading things through is practically ruining the Society. We had better take twenty-four hours to discuss it instead of letting a few men rule.

Dr. Lewis: I am in favor of Dr. Abernethy's substitute,

but I am in favor of substituting Dr. Sykes' because I don't think there is any question but what there is a large amount of dissatisfaction in the Medical Society with the present method. Whether that is deserved or not is not the question. I believe the substitute as offered,—carried on just as it has been before,—with the exception of the election of the more honorable officers, I believe it would undoubtedly, popularize the Society if every member of the Society felt that he had a voice in the selection of the officers,—and therefore I believe it would be a wise thing, that compromise as suggested by the President, who, I think we all admit, has a level head,—that we will please the Society, and instead of interfering with the progress, I believe it will become more popular than before. Whether that is going to be permanent or not is not the question. I believe it will meet the present conditions.

Dr. Stewart: I would like to have the question put as early as possible.

Dr. Crowell: There is one thing that is bothering all of us. It seems that the time which this substitute specifies is different from the time specified by the State law.

Dr. Sikes: No, this provides for the afternoon of the second day.

Dr. Crowell: The election for the State Board of Health and the Board of Examiners is the morning of the second day.

Dr. Bahnson: It is the morning of the second day.

Dr. Crowell: I know this House of Delegates. We want to do what is best for all concerned. It is impossible to please everybody, but let's get as near as possible to what will please everybody. I am not in sympathy with the feeling of unrest, but I am willing to make any sacrifice that will further the good of the State Medical Society. Let's get together as best we can. I am not in sympathy with it, but I am willing to give and take, and if we can get this time fixed so it will not

conflict and take too much time from the scientific work, let's do that. We have got to keep up the scientific work, The Society is doing well. Look up five before and five years after the reorganization, and the attendance is more than double under the old plan. The number of papers prepared for the State Medical Society is about three times as many as under the old plan. It is doing well. The Society is growing and spreading, but there is unrest and it may be if we can get a little closer together, give and take a little bit that we can get on a medium ground and there will be more harmony in the Society. I am not in sympathy with it, but I am willing to give and take. I don't know that there is anything else I want to say. That is my feeling. I am interested in the Society, I am not hunting any office, but let's get as close together as we can.

PRESIDENT: (Rising to speak)

DR. ABERNETHY: I will rise to a point of order. Put somebody else in the chair.

PRESIDENT: I will address Dr. Crowell as chairman. I have studied this carefully and want to assure you there is no conflict as to State law, no conflict with the Constitution and By-laws, with one exception, that is the time of the election of the elective member of the Board of Health. That time should be in the con-joint session, and should be so amended as to put it at the time of the con-jont meeting. Otherwise, there will be no conflict of time with the State laws.

DR. BATTLE: If necessary I offer an amendment that the discrepancy in the time of election of these officers be made to tally with the State law. I am satisfied there is a great deal of unrest with the physicians over the State, and I will confess to you that I came here Tuesday morning, went to the hall and sat about fifteen feet from the readers of the papers, and I suppose I heard one-third or one-fourth of what they

read. It is absolutely unsatisfactory and if the readers of the papers are not going to read louder, the election of officers is exceedingly interesting, and for that reason if nothing else, I would like to have the election of officers in the house. One paper I was very much interested in, nobody heard anything, and I hope that will be corrected. Our Society is doing well, is making great strides forward, and can make greater strides, I believe. Any reactionary movement, as the reorganization of this Society at Hot Springs is going to be followed by a reactionary movement, and I believe we will hit upon this substitute and keep the pendulum from swinging too far the other way, and I shall be delighted to vote for it.

Dr. McBrayer: I would like to vote intelligently upon this matter if possible to do so. This Constitution and By-laws which I hold in my hand seems to be a redraft of the committee, and this substitute, as I understand, offered at this time, will take the place of this entire matter.

President: That is correct.

Dr. McBrayer: If it does that, we are abolishing the larger part of the Constitution of our Society.

Dr. Sikes: This does not touch anything except these special clauses. We will leave the balance of it entire.

Dr. McBrayer: I must confess I do not understand the parliamentary proceeding.

Dr. Sikes: We were appointed not to do away with the Constitution, but to offer what we thought were proper amendments. We simply offer this as a substitute to the clauses we would change in that.

Dr. McBrayer: If that is correct I will not offer any further remarks. According to the reading of this, it seemed to me you were doing away with the larger part of the Constitution.

Dr. Sikes: We simply offer that as an amendment.

Dr. Lewis: The substitute for the recommendations of

the committee for the changes. All articles of the Constitution and By-laws or any part in conflict with this amendment are hereby repealed.

Dr. McBrayer: That means you repeal them.

Dr. Sikes: Those in conflict with this are repealed.

Dr. Williams: Let him read it.

Dr. McBrayer: I will ask you to read the last clause.

Dr. Sikes: All articles or sections of the Constitution and By-laws or any part of them in conflict with these amendments are hereby repealed.

Dr. McBrayer: As I understand, it says all sections of the Constitution or any part in conflict are hereby repealed.

Dr. Sikes: There is nothing repealed except those in conflict with these amendments.

Dr. McBrayer: There is one other point. I don't believe, intelligent as these gentlemen are, there is not one out of five of the House of Delegates know what is going on. I think we ought to know and not pass on it without knowing what we are doing. The idea of such a gentleman as Dr. Abernethy arguing that by taking the nominating away from the Nominating Committee would give us fine papers and a few, and a good attendance is ridiculous. The argument that we have an election in the general session would give us better papers seems to be unthinkable and that is the gist of most of the arguments. The reports say that the Society is in better condition than it has been for years. There is unrest. There was objection from a certain crowd of men ten years ago. It was generally understood no man could be elected unless they endorsed them. There was unrest then, there will be unrest again. I think that is a mighty poor argument. If it is best for the Society and there are any arguments in its behalf, I am willing to try it. We are not all babies. We ought to argue the thing in good fine reason and common sense. I am will-

ing to try it. Don't think the millenium is coming tomorrow. We are going to have politics as long as man lives.

DR. SIKES: As a matter of information, Dr. McBrayer does not seem to understand that the Constitution and By-laws is entirely set aside provided we adopt this, and we insert this in the old Constitution and By-laws.

Cries of "Question."

DR. BAHNSON: I only want to rise to a point of order. It seems we are making progress backward. Perhaps I made a mistake in trying to bring this up in toto. I am perfectly sure we would get an understanding of it and make faster progress if we take these articles and discuss them, take the first section and see what the sentiment of the Society is. I move that we take the matter up and read the first section.

PRESIDENT: I shall have to rule. Dr. Faison says I was in error as to the motion and time of seconding. If I was in error as to the time, certainly Dr. Abernethy's motion was in order and is now the thing before us.

DR. BAHNSON: That is what I beg of you to rule upon. There is nothing before the house.

DR. ABERNETHY: I will withdraw my motion in favor of Dr. Bahnson's motion.

A MEMBER: Second the motion.

PRESIDENT: Now your motion will be in order.

DR. BAHNSON: Only that we read section one of the substitute and act upon it.

PRESIDENT: Are you ready?

DR. LAUGHINGHOUSE: I have listened with a great deal of interest. This is my first experience in the House of Delegates. I never knew what a burden the House of Delegates had to carry until today. I think the North Carolina Society was chartered in the 40's. From 1850 until 1903, the Medical Society did not have enough members to exceed 300 men.

Since 1903 under the management by which we are not being governed, the Society has increased its membership to approximately 1,200. Not only has it done that but the character of its papers have been better than before. I am very much in favor of systematizing everything, and rather than retrogress, I would prefer to have a school of elocution in order to perfect the voice. Rather than retrogress, I would prefer putting the Society in sections, have the scientific papers read in one hall, the medical papers in another, and the House of Delegates in another. I have got no axe to grind, I have nothing at stake but the good of the Society. I don't believe there is a man in the Society but has got the interest of the Society at heart. There will be a certain interest in politics after Dr. Stewart and myself are dead.

To my mind, we have got our hands on the very heart of this Society; this is the most serious thing we have taken up in or out of the House of Delegates since 1903. It is too important to rush, it is too important and serious for us to be standing here bringing charges of this thing, that and the other thing on this floor to disturb and tear to pieces. To my mind the proper thing to do is to make copies of all these resolutions and all amendments and send to the different members of the Society and let them study this and study it carefully. It won't do to hurry in the handling of such a proposition. Put these things in print, send them to the members, let them think the matter over carefully, and perhaps next year, or the year after, or the year after, we will be in position to handle it with some degree of intelligence and satisfaction. It is for that reason that I move that this be temporarily tabled,—at least for this meeting, and I make a motion to the effect that these amendments be put in print and sent to every member of the Society with the request that they study it carefully.

A Member: I second the motion.

Dr. Bahnson: I have had a copy sent to me for several months. There are four or five pages. We can take the matter up and decide the question. Let's get done with something. Here we are talking to no purpose. Why not settle the matter once for all? No man is going to read it in the next year who has not read it for the last three months.

Dr Williams: I rise to a point of order. There is a motion that this be read by sections.

Dr. Laughinghouse: I venture to say that 90% of us when we read these amendments before we came here, did not realize what an exceedingly important proposition this was.

Dr. Bahnson: How long will it take to realize it?

Dr. Laughinghouse: I realize it now.

Dr. Adams: I don't see the use of so much argument over this question. If we take that paper and adopt it by sections it will not be legal. I understand this body has no right to enact a law until it is passed out to the Society and lies over for a year. If we attempt to adopt that substitute, it will have to go before the members. I don't see what we are going to gain by the substitute or amendment. I remember when the Committee on Nominations came in this morning and made their report, you stated from that chair, that if there are any further nominations, that this House of Delegates had a right to make them, and if the Nominating Committee is abolished, I don't see that they would better matters. I love to move forward, I don't believe in going back. I would like to vote, as my good friend, intelligently on this question, and I realize at this time that there is a spirit of unrest. I don't see what we are going to gain by doing anything like this, and certainly not to take up our valuable time and vote on the substitute by sections.

President: I understand Dr. Laughinghouse to offer as a motion that the substitute be received and submitted for a

year's consideration to the County Societies. I scarcely think it is in order at this time, but I think if we proceed regularly we would vote whether we adopt this new compromise substitute as offered in the place of the other, and if we adopt that it would be before us for consideration, then the motion to refer it back would be in order.

DR. LAUGHINGHOUSE: Suppose we amend it.

DR. T. E. ANDERSON: I want to offer an amendment to all the motions before the house and in the horizon. This is always going to be a disturbing question, and I do think Dr. Syke's recommendation meets the requirements, and I move that we proceed to vote on Dr. Sikes' offering and dispose of this question at once.

A MEMBER: Second the motion.

DR. FAISON: I am very much in favor of Dr. Laughinghouse's motion and want to ask them to vote down Dr. Anderson's.

PRESIDENT: I am going to put Dr. Anderson's motion with the understanding that Dr. Laughinghouse's motion will be the next. If we vote to consider this in place of the one before us, then Dr. Laughinghouse will be in order.

DR. CROWELL: It looks like we are getting in trouble. If Dr. Laughinghouse's motion goes through, that puts it back to the County Medical Societies, and of all the different opinions that will call up, and we will have the same thing next year. I can not keep from feeling that maybe we had better let it alone.

DR. POOLE: I have been in close touch with this matter for two years. So far as leaving it to the County Societies, it would be a waste of time, as this committee was appointed two years ago to draft this modification and at the next meeting submitted their modification. This substitute has been before the County Societies, and I think it will be a waste of time to

re-refer it to the County Societies. I am in favor of Dr. Anderson's motion.

Dr. Abernethy: I will say to the parties that the County Societies have nothing to do with this meeting. There are about five from the County who come here. The County Societies have absolutely nothing on God's green earth to do with the matter. In Wake County we have sixty members, and I venture to say there are not five who know anything about this amendment.

President: If you are ready for the question, I will put Dr. Anderson's motion, which is that this substitute as read by Dr. Sikes be adopted as the matter to take the place of the one offered a year ago. All in favor of that will say Aye.

Dr. Anderson's motion prevails. I declare the substitute to be the matter up for consideration, and now Dr. Laughinghouse's motion to refer this new one to the Counties for consideration is before us, and I am going to put a motion on that.

Dr. Lewis: I want to amend that to say that the Secretary be instructed to send a copy of the amendment alone and a copy of the Constitution with the amendment incorporated, so it will be shown how it reads.

President: Gentlemen of the House, I will address Dr. Crowell as Chairman. I believe your motion is not best for the present. We incurred the expense last year of this publication which we have now disposed of, and if we were to publish in full the Constitution with that in there, and dispose of that, you see we would incur the expense of publishing the full Constitution with an amendment which might be of no use, and we would have that expense. It costs considerable to publish the Constitution.

Dr McBrayer: I don't want this House of Delegates to make any mistake about this matter. I don't think the matter of $10.00 or $100.00 counts for a row of pins with the

members in this matter we have under consideration. I have great respect for the committee and to my mind they prepared this Constitution in the proper manner. I got a copy and read it, and in a leisure moment about midnight a few weeks after, read it again but I did not bring one of them with me. When I came here I asked did each member have a copy and the Secretary replied he had sent them out once, but we cannot act on a thing of that kind without a copy. It seems that Dr. Laughinghouse's motion is proper at this time. With Dr. Lewis' suggestion, I would ask him to go further and ask that the Constitution be printed as it was before the amendment was offered. That in the index, notes be made where the amendments are, that the amendments be made out by themselves, and that a copy of the Constitution as it will be amended by the substitute—or that the amendment show as it will read when amended. I beg of you gentlemen not to do something where we won't know what we have done. This starts off by reading "Substitute for Constitution and By-laws offered at annual meeting, 1911. Reads Section 1, and does not say what it amends, and to the best of my knowledge, this appears to be a substitute for the whole thing. It is necessary for us to appoint a committee, and we will need the services of able lawyers, to take this substitute and write a new Constitution, and fit our amendments where they go. I don't think we are faithful to the trust reposed in us if we adopt a measure that we don't know where it goes.

A Member: Ask Dr. Laughinghouse to add that the committee be continued:

President: Dr. Lewis' motion would come first.

Dr. Lewis: I suggest that Dr. Laughinghouse incorporate that.

Dr. Laughinghouse: I accept the amendment with this suggestion of Dr. McBrayer's incorporated.

DR. LEWIS: That is a very obscure statement of it, and it seems to me that the committee ought to be requested to change the form of it and put it in form that Section So and So is amended and have it printed as amended.

PRESIDENT: Now, I think everyone understands it. let us vote some. All in favor of the motion of Dr. Laughinghouse say Aye.

The Ayes seem to have it. The Ayes have it.

DR. BAHNSON: I would like to call for a rising vote.

PRESIDENT: Gentlemen, I think I followed parliamentary usage. I said the Ayes seem to have it.

DR. STEWART: As I understand it, this amendment is to be inserted into the old Constitution with the sections marked and the sections sent to all members with the amendment in it. I see nothing wrong with that, to put an amendment in the Constitution and send to every member. It ought to be made plain so everybody can understand.

PRESIDENT: The proposition just now is on a rising vote.

DR. PARROTT: Are we voting on the matter that the thing be referred to the committee, that they get it up in a different shape and submit it to the County Societies and take it up next year?

PRESIDENT: All in favor of this motion will signify it by rising.

DR. MCBRAYER: It seems to me on a division vote it would require a roll call for some Counties have two members and some three.

PRESIDENT: There was a request for a rising vote on Dr. Laughinghouse's motion and I called for all in favor of his motion to rise, and I call now. All opposed will rise.

SECRETARY: Seventeen majority for it, and ten against.

PRESIDENT: I declare Dr. Laughinghouse's motion adopted. What further business is there before the House of Delegates.

Dr. Way: At different times in the history of this Society it has been its pleasure to honor itself in having the portrait painted of a past-President of our Society, of some distinguished member of the profession for presentation to the State library. It is an occasion for the expenditure of the Society's funds which does not arise frequently. North Carolina has a great many accomplished physicians, a great many skilled surgeons, and good men, excellent men are very common in our ranks. Now and then only does it occur that there rises above the common, that there comes into view like some mountain peak on the plains a character in our profession so prominent where we should further honor an ex-President of the Society in having his portrait painted. I believe this has happened. I believe that now is the time for another manifestation by this Society of its appreciation of the work and character and accomplishments of one of its deceased Presidents. Without further preliminary remarks I wish to offer a motion that this Society have painted a portrait of the late Dr. Patrick Livingston Murphy. I started to say of Morganton. I won't. I will say Patrick Livingston Murphy of North Carolina. This portrait to be placed, with the regard and appreciation of this Society in the hall of the State library at the Capitol at Raleigh. To those of you who knew this man well, nothing need be said. To those of you who did not know him, I might say in every respect his memory is well worthy of this tribute of appreciation and affection for a great man in every way, a great citizen, a great doctor, a great alienist. The work he did for North Carolina in his special line, the work he did in the American Societies along the line of work in mental affections will live as long as the history of American medicine lives. Without further comment I move that this Society have painted a portrait of Dr. Murphy, and have it

placed in the library at Raleigh, the expense to be incurred by the Society.

A MEMBER: I second the motion.

PRESIDENT: You have heard the motion, it is properly before you for discussion. As many as are in favor of it will say Aye. The motion is adopted. Any further business before the House of Delegates.

DR. GRAHAM: It has been the custom in the Society to honor the older members who have attended the meetings for years and years by electing them Honorary Members, that election to be made by the House of Delegates. In my County, we have Dr. Johnson, who has been a member since 1879, who was present this year, and I want to propose him for membership as an Honorary Member of the North Carolina Medical Society.

DR. SIKES: Why don't you suggest that all those eligible be placed on the roll as Honorary Fellows.

PRESIDENT: I will put the motion in this way, it is moved that the Secretary be instructed to place on the roll of Honorary Fellows all the names of those who have become entitled to it by thirty years' continuous payment of dues as members, and so notify the men. All in favor of the motion will say Aye. It is adopted.

DR. HARDY: Do I understand that applies to Durham County alone?

PRESIDENT: No, to all eligible under the laws.

In accordance with the above instructions to the Secretary the following members are hereby enrolled Honorary Fellows:

Dr. T. F. Meisenheimer, Morven.
Dr. M. H. Fletcher, Asheville.
Dr. H. Bascom Weaver, Asheville.
Dr. John Hey Williams, Asheville.
Dr. Willard P. Whittington, Asheville.
Dr. T. F. Pharr, Concord.
Dr. L. M. Archey, Concord.

Dr. Robt. S. Young, Concord.
Dr. A. R. Wilson, Greensboro.
Dr. L. W. Hunter, Sardis.
Dr. John R. Irvin, Charlotte.
Dr. C. A. Meisenheimer, Charlotte.
Dr. W. C. Galloway, Wilmington.
Dr. Richard Dillard, Edenton.
Dr. J. D. McMillan, Edenton.
Dr. John Whitehead, Salisbury.
Dr. Kemp P. Battle, Jr., Raleigh.
Dr. R. A. Smith, Goldsboro.

Dr. Laughinghouse: I move that the Secretary be instructed to appoint as a Committee, Dr. Way, Dr. Lewis, and Dr. Bahnson to take up the matter of having Dr. Murphy's portrait painted.

President: I will not call for discussion. All in favor of this motion say Aye. It is adopted. I appoint Drs. Way, Lewis and Bahnson as suggested.

A Member: I move we adjourn.

A Member: Second the motion.

President: All in favor of the motion say Aye. We will now stand adjourned.

Dr. Way: *Mr. President*: If it is in order, the Committee on the President's address desire to submit the following:

Dr. J. Howell Way presented the following:

The Committee on President's Address beg to report they have listened with interest to the masterly address of our esteemed President, Dr. A. A. Kent, and in their opinion it is replete with helpful suggestion and indication of the careful studious consideration all matters pertaining to the welfare of both profession and people have received at his hands during the year he has guided our Society's "Ship of State" We recommend its publication in the journals and in our annual volume as a production worthy to rank with the excellent addresses of former occupants of the chair and well calculated to inform, instruct and inspire our membership. In his retiring we felicitate President Kent on a successful year, a pleasant annual session, and extend him the most cordial good wishes of the Society for his continued health and happiness. A high place in our esteem, a warm

spot in our affections, are his—may the present very prosperous condition in which his administration leaves this Society continue.

J. HOWELL WAY, W. S. RANKIN, A. J. CROWELL,
Committee on President's Address.

Unanimously adopted.

DR. JOSEPH GRAHAM: I would like, Mr. President, to introduce the following motion.

RESOLVED, That the North Carolina Medical Society indorse the Southern Medical Association and urge our members to unite with that organization.

DR. FERRELL: I would like to make a motion that the Society extend to the Henderson and Polk County Medical Society, to the people of Hendersonville, who have made our stay here so pleasant, and who, in every way, have shown us the closest attention, a rising vote of thanks.

Carried by rising vote.

DR. HARDY: I desire to offer the following resolutions:

WHEREAS, A due regard for the protection of our State from known criminal parentage renders advisable the adoption of laws by the Great State of North Carolina for the sterilization of confirmed criminals such as are now in vogue in Indiana, New Jersey, and other States.

THEREFORE BE IT RESOLVED, That it is the sense of this Society that we wish to go on record as approving such legislation and urging the General Assembly to adopt such measures as they may deem best for such purposes.

DR. RANKIN: I move that this resolution be referred to the Legislative Committee.

DR. FAISON: I move to table Dr. Rankin's motion.

Motion to table is lost.

THE PRESIDENT: The resolutions are before you for your vote.

DR. RANKIN: I move to refer this to the Legislative Committee of the North Carolina Medical Society.

DR. STILES: I rise to a point of order. There is a regular Legislative Committee, and the matter is referred to them.

Were any other action followed, there would be no use for the Legislative Committee.

THE PRESIDENT: This body can pass a resolution or kill it.

DR. HARDY: *Mr. President*: The motion has been made to table the resolution, and it was defeated. Therefore the resolution is before the house. I want to know if this resolution is now before the house.

THE PRESIDENT: Dr. Rankins' motion is now before the house.

Dr. Rankin's motion carried.

DR. KENT: *Fellow Members*: In turning over the very high and responsible position of President to my successor, I wish first to thank the Chairmen of Sections for the most excellent work they did, in making this meeting the fine one it has been. I want to thank those especially who read prepared papers, and who came here and instructed us with their papers. I want to thank all of the members for their attendance upon our meeting, and for their efforts to make this one of the most successful meetings of our Society. I will ask Dr. Thomas Anderson and Dr. Rankin to conduct the new President to the chair. (Applause).

Dr. Munroe, it gives me pleasure to welcome you to the chair as the newly elected President of the North Carolina Medical Society. I do it with the greatest of pleasure, because I know I turn the Society over to more capable hands than those which have conducted the "Ship of State" during the past year.

DR. MUNROE: *Mr. President and Gentlemen*: I have no speech to make, and have not time to make it if I had prepared one. I trust the Society will be conducted as successfully in the next year as in the past.

I am glad to hear that the Legislative Committee is still in existence, and I hope we will not have a very great deal for

them to do. We can have a thoroughly scientific meeting next year.

The matter of appointing Chairmen of Sections has not been gone into, but I will notify the appointees by mail.

There being no objection, I declare this Society adjourned, to meet again in Morehead City next summer.

SOME OF THE PRACTICAL USES OF ELECTRICITY WITH REPORT OF SEVERAL CASES.

R. L. Pittman, M.D., Fayetteville.

While it is true that electricity is an agent of much practicable therapeutic value, it is also true that it is looked upon with skepticism by a large number of the profession. The reason for this seems to be two-fold. First: The greater majority of those who employ it, do so without a proper understanding of its capabilities, limitations and the proper technic, hence do not get the results they expect. As an example of this I not long ago saw a case of paralysis of the arms due to an arsinical neuritis, to which the faradic current had been ordered applied for twenty minutes, twice daily, by a prominent physician. The uselessness and possible harmfulness of such a procedure will be apparent to all acquainted with the proper uses of electricity. In hospitals the electricity is frequently applied by a nurse, who as a rule has received little or no instructions in its use. I have never allowed a nurse to treat a patient under my charge in which electricity was advised, but have myself made every application or else discontinued the treatment, unless there was someone who understood the uses of electricity in the treatment of the condition existing. In the second place, some of those who have made a special study of it, have in their enthusiasm made such extravagant claims on slight evidence that many have come to look upon all claims made for it, either with distrust or attribute any beneficial results to its psychic influence alone. Of the different currents and their physiological action, I shall not enter into now, as the time is too short. But will only give a brief definition with some remarks of the capabilities of some of the various currents used.

Of the many forms of electricity the galvanic or constant current possesses all of these actions to a greater degree than any of the rest. The galvanic current differs from the faradic in that it is a constant continual current, while the faradic is an interrupted current. The galvanic current depends principally for its therapeutic activity on the so-called polar effects which occur at each pole, the intrapolar effects occurring in the region between the poles and its power of producing muscular contractions. The first consists of electrolysis, phoresis and electrotonos. The positive pole or anode is acid in reaction producing hyperemia, stimulating the secretory elements of the body fluids and tissues. The negative pole is alkaline in reaction and bears a similar attraction for many of the body fluids and gases. There is thus a double current passing between the two poles. The faradic or induced current has no power to produce the polar and intrapolar effects possessed by the galvanic current but is an efficient agent in causing muscular contraction except when the lesion is in the peripheral neuroa, that is peripheral nerves, nuclei of the cranial nerves and cells in the anterior horns of the gray matter of the cord. It also, when rapidly interrupted, acts as a sedative to sensory nerves and thus may relieve pain.

The high frequency current also produces a local and general action. The former is produced by either the spark or effluve which has marked influence upon all the tissues of the body, producing hyperemia, stimulating the secretory elements of the intre-abdominal organs, increasing phagocytosis and lowering the blood pressure. The sinusoidal current is an alternating current, differing from the faradic current in that the alterations are gradual, those of the faradic being abrupt. Hence it is much less painful and also differs from the faradic current in that it will cause muscular contraction in muscles cut off from their trophic centers.

The static current is unidirectional and therefore has a positive and negative pole which have different actions similar to that of the galvanic. The spark causing contraction of the muscles and other tissues and will relieve local congestion or stasis, relieve pain and remove inflammatory exudates. The above remarks have been made to give some idea as to the various forms of electricity with some of the capabilities possessed by the various currents. To go further into the detailed action of the various forms would require much time and space. It is a mistake to regard electrotherapy as a new subject, it is nothing new. The new thing is to bring down to the concrete what we can do for the individual patient by this form of force. You are all acquainted with the ordinary galvanic current which can be obtained from the ordinary dry cell. This form of electricity is not to be used in any form of inflammatory condition, especially inflammation involving the peripheral nerve or their trophic centers, but is especially applicable to the sub-acute or chronic inflammatory conditions. As an example of this one would not use the faradic or galvanic current during the early stages of anterior polio myelitis or acute neuritis of any origin. But when the acute stage has subsided, then this form of electricity will be found to be very efficacious.

The same is true of a very common form of paralysis of the face, known as Bell's Palsy. In these two conditions the galvanic current gives very good results. Insomnia can often be relieved by constant applications to the forehead of the positive pole while the negative is applied to the back of the neck. I remember distinctly a case treated in the Presbyterian Hospital of Philadelphia, in which many of the hypnotics failed to give relief, where the application as above mentioned was kept up for thirty minutes, the patient gradually became quiet and dropped to a deep sleep. If it is wished to relieve pain by electricity, the positive pole being possessed

of a sedative effect, it should be applied to the painful area, the negative pole having a stimulative action is applied elsewhere. The faradic current is a stronger current than the galvanic and is indicated where a stimulative effect is desired, as in chronic neuritis, joint diseases, etc. There is a condition which you have all seen treated by the galvanic and faradic currents with little or no beneficial results, viz.: apoplexy. In this disease it is already understood why the application of electricity is of little or no value. Here the only beneficial result obtained is that of muscular contraction, best produced by the faradic current. The central connection of the activity of the paralyzed parts being cut off from the brain, renders stimulation of the co-ordinative centers of these parts impossible. It has been proven that stimulation of the brain or spinal cord by the application of the electrode is impossible, there being so much intervening tissue and bony structure between the electrode and the nerve tissue, hence spinal application in paralysis of central origin is of little or no avail.

The Uses of the High Frequency Current. In my experience which has been confined to the treatment of hospital cases, I have found the high frequency current to be very valuable in the treatment of cases of nervous exhaustion, hysterical paralysis, intercostal neuralgia, acute gout and the menstrual pains at the time during menopause. I had a short while ago three patients suffering from functional nervous diseases. Two having hysterical paralysis of the lower extremities. I treated them daily with the high frequency current, using the insulated wooden handle in which the glass electrode fitted with a flat surface, to the other end of which the negative pole was attached. A ten minutes' treatment was first administered over the lumbar region and to both the entire extremities treatment was gradually increased from three to five minutes daily, until a thirty minutes' treatment was given every night. These treatments were given in a dark room, the only

light being that from the electrode. This was kept up for about thirty treatments, the patient beginning to show a gradual improvement after the first few treatments and at the end of thirty days both patients were walking with no difficulty, their station and gait being perfect. The third type of case was one of excessive nervous strain. In view of the patient's age, 36 years, who had undergone operation five years ago for removal of breast, had several children, kept house and was forced to do a great deal of work in the house, she had absolutely no control of her nervous system and every time I gave her a treatment, she would have a pronounced nervous rigor and would not sleep for several hours. After ten treatments it was decided to discontinue this form of treatment and the patient seemed to rest better and improve more rapidly than she did while it was being employed. I had a similar experience in a man of the same nature. The high frequency being tried and discontinued after several treatments. I think that in such conditions the nervous system is in a state of such high tension and so very easily excited that it does not require the mild stimulative effect received from high frequency current, but requires sedative treatment instead. These few cases have been presented to you to impress upon you that every case of nervous disturbance is not a suitable case for electricity but is mostly contra-indicated, in certain conditions of the nervous system as mentioned above. It is very important in treatment of cases of nervous diseases of the above type, to have the apparatus in perfect order and be sure that the different procedures will be carried out with no errors in technic, upon this point largely depends the result obtained by the treatment. It is well to explain to the patient just what is being done and assure them of the value and results which are sure to be obtained. It is often very important to regulate the strength of the current in the beginning, especially if the patient is highly nervous and easily excitable. Whether you are using

the static spray or the electrode it is well to have the connecting pole at a distance of about eight inches from the patient when the treatment is begun. If the patient is seated in a chair or on an insulated platform with the connecting pole attached to a conducting plate, which is placed at a distance from the patient's feet, the strength of the current can be diminished or increased by bringing the feet close to the plate or by carrying them farther from it. The grounded wire may be allowed to return to the machine or go into the floor. The second type of cases which have given very good results, is that of acute gout. A patient was referred to me about six weeks ago, suffering with acute gout, was unable to walk and was suffering severe pain. He had taken morphine at intervals to relieve the pain until he could reach the hospital. I applied the high frequency current placing the feet upon the plate and rubbing the feet and legs to the knees for thirty minutes. The patient at that time was free from pain, put on his shoes and walked with ease. Such treatments were administered daily for three days, during which time the patient was fairly comfortable without morphine or its derivatives. The patient did not return after the third day for further treatment and I have not seen him since, therefore do not know the final outcome of the case.

Intercostal neuralgia yields readily to the application of the high frequency current, this being one of the conditions treated with the most beneficial results of many diseases for which electricity is used. I have used it in a number of cases and have found it to be a very satisfactory means of treatment. The same is true of acute sciatica. The few cases which I have described to you are only those which have come under my personal observation and for this reason I have confined myself to only a few conditions and have not attempted to describe or even name the numerous conditions in which the

uses of electricity are beneficial. But as I mentioned before, I have tried to describe to you the technic and conditions in which the practicable applications of electricity are applicable and beneficial to the individual patient.

ADENOIDS IN INFANCY.

LEWIS W. ELIAS, M.D., Biltmore.

This is not a comprehensive review of adenoids. It is, rather, an effort to focus attention on the important influence that adenoids exert during infancy; and to urge their recognition at this age.

All are properly instructed in the symptoms of adenoids and their effects after the third year. Earlier than this, we seldom think of them, and less often examine for them. The specialist does not have the opportunity while the general practitioner neglects to use it. Thus adenoids in babies receive little attention. Yet text-books on children's diseases for a number of years have been calling our attention to the, before unsuspected, frequent occurrence of adenoids in infancy.

By the presence of adenoids we do not mean the mere existence of lymphoid tissue on the vault of the pharynx, which is normal, but a hypertrophy of this tissue, so as to either cause symptoms of its presence, or to cause complications referable to it. In other words, the only adenoids which we know as such, are those giving trouble.

Adenoids may be present at any time from birth to old age. Symptoms of their presence vary with the patient's age. If we wait for the "adenoid face," or mouth breathing, or snoring, we will frequently overlook the presence of adenoids in babies. In infancy they may cause most of the classic symptoms that we find in older children; but especially frequent are: nasal obstruction and discharge, chronic cough, ear complications, and symptoms referable to digestive and nutritive disturbances. It is to these that I shall devote myself.

But first note a few points not usually borne in mind, namely that in the first weeks of life a baby does not know

how to breathe through its mouth. A complete nasal obstruction, although the air-way to the lungs may be entirely free through the mouth, will cause cyanosis and exhaustion, and eventually death. On the other had, adenoids may be present which cause no obstructive symptoms, and yet make swallowing so painful that the child may starve, and the adenoids remain unsuspected.

Let us now briefly consider the symptoms which suggest adenoids in babies.

In nasal obstruction and discharge we find the baby suffering from a more or less chronic rhinitis, which is hard to cure, and insists on recurring. This obstruction interferes with nursing, making the child appear indifferent to its food, and impairs oxygenation, and the proper development of the chest. Adenoids are so frequently responsible for these conditions as to overshadow all other causes that may be thought of.

The presence of adenoids may cause a paroxysmal cough closely resembling purtussis. A chronic cough, usually worse at night or on lying down, is another, and sometimes an only, symptom of adenoids. Morse says that adenoids are one of the most common causes of persistant cough in infancy. He relates in Case Histories in Pediatrics an example of this sort. I quote briefly from this account:

"Virginia G., seven months old, had a cold in the head which lasted about a week. Soon after recovery from this cold, she began to have paroxysms of cough at night and during her naps. She did not cough much when awake, had no nasal discharge or fever, did not snore at night or keep her mouth open, and nursed well. The physical examination showed nothing in the nose, fauces, or chest, to account for the cough. Nevertheless, she coughs and there must be some cause for it. This cause will probably be found in the nasopharynx, in spite of the absence of all the symptoms of ade-

noids common in older children. Examination of the nasopharynx then showed a small amount of soft adenoids, not sufficient to interfere in any way with respiration. Adenoids of this sort, however, if inflamed, will often secrete just enough fluid to keep up a constant tickling of the throat and cough when the baby is asleep. Removal of the adenoids will stop the cough at once."

Again adenoids may become infected and absorption from them cause high fever and prostration. A case illustrating this is the following: George L., two years old, had fever, cough, and marked prostration for eight days. I found a temperature of 104, with nothing to explain it but slightly inflamed tonsils and a mass of adenoids. Nasal breathing was obstructed; there was some nasal secretion. A precautionary culture from the throat showed no diphtheria. In the meantime, treatment of the adenoids, by means of drops in the nose, was followed by immediate and marked improvement. Within two hours after this treatment was instituted, the child, for the first time since the beginning of its illness, was down on the floor, playing with its toys and taking a lively interest in its surroundings. The temperature came down rapidly, and permanently disappeared within twenty-four hours. The cough disappeared likewise.

Ear trouble in infancy is usually secondary to some primary infection, or to adenoids, the latter being by far the most frequent cause. Even when the otitis follows a previous disease, it usually occurs only in those cases where adenoids also exist. Therefore, with any disease that may be complicated with otitis media, it is not out of place to examine for adenoids, since they so largely increase the chances of this complication. On the other hand, when our attention is directed first to trouble with the ear, adenoids should invariably be looked for and removed, if we wish to cure the ear perma-

nently. The following is a case showing adenoids complicated by otitis media:

Mary W., at six months of age, was slightly rachitic, but fairly nourished, and slowly gaining, in spite of a persistent rhinitis, which showed frequent exacerbations. A good sized mass of adenoids was found and its removal urged. The operation, however, was deferred from time to time. When seven months old, the baby developed a severe otitis media with discharging ears, followed by over a week of such suffering as to make a mastoid operation seem the probable outcome. When the baby finally regained the ground it had lost, and its hearing was partially restored, the family moved and were lost sight of. But I have always felt that the early removal of the adenoids in this case would have averted the otitis media with its suffering and danger.

Since adenoids and otitis media are so closely associated, it may not be amiss, just here, to speak of the vague symptoms of otitis media in infants. At this age, we do not expect to find earache, which is a cardinal symptom later. All children are poor patients at locating pain. I have known a bright, ten year old girl, with severe otitis media, to run a high temperature for a week before she made any reference to pain in her ear. With babies, symptoms of pain are the exception, not the rule. Kerley found symptoms indicating pain absent in 70% of his cases of otitis media. There was only one symptom present in all of them, that was fever. Fever in a baby, without other distinct cause, should always suggest otitis media. This has been so impressed upon me, by happy and unhappy experience, that I now habitually carry a head mirror and set of ear specula in my bag, for use in such cases, or in any inflammation of the upper air passages.

Since the symptoms of otitis media may be so few, let me stress the point this way: Any case of trouble in a baby, with high temperature, and on careful examination not showing

sufficient cause elsewhere, is considered otitis media until disproved. This, so far, has been found a safe rule.

Digestive and nutritional disturbances may be caused in various ways. One is improper oxygenation, due to nasal obstruction. This causes great damage. Again, nutrition may be affected by direct interference with the taking of food. This comes about from one of two causes: first, from nasal obstruction, so that nursing the breast or the bottle is difficult, consequently the baby takes a smaller amount than he should. Or the same thing results from the adenoids causing pain on swallowing, which they may do as above noted, even though the adenoids may not be large enough, or so situated, as to have shown any obstructive symptoms whatever. In these ways, and by no means as infrequently as night be supposed, a baby that was developing satisfactorily, ceases growing and begins to go down. Constipation, from the small food intake, comes on with its accompanying symptoms of indigestion. In such a case, if time is wasted by trying to adjust milk formulae, or to treat an obstinate cold, we only permit a bad case to grow worse. The results are grave and far-reaching. The remedy is speedy and certain. All that one need fear is that the diagnosis may not be made.

The treatment is, of course, removal of the adenoids at once. There may be a recurrence, and the younger the child the more apt is it to happen. However, this should not deter one from giving a baby the benefit of the operation, since it is simple and practically free from danger. While the harmful results of leaving adenoids alone, or employing only palliative treatment, may be disastrous to health and even life.

The following case shows the adenoids affecting nutrition: Mary D., when six months old, was slightly under height and weight, but rosy and plump, and the picture of health. Moreover, she slept peacefully the whole night through, and all day she was happy and contented. She had, from birth, been

partly breast and partly bottle fed. Much care had been exercised in gradually increasing the strength and quantity of the cow's milk. She was doing perfectly on the mixture of the above age. When seven months old, she was brought to the office for treatment. The mother expressed the fear that the milk was too strong, because the baby had recently grown cross and irritable by day and cried at night, and slept little. She nursed both the breast and the bottle with great indifference, taking only a small part of her usual amount of food. There was no vomiting and no fever, the bowels were slightly constipated. The mother had observed no snoring or mouth-breathing. Examination showed a slight nasal discharge, chest and abdomen were negative. A digital examination of the nasopharynx showed a moderate sized mass of adenoids. Removal of the adenoids was followed by the immediate cessation of all symptoms. The baby slept well the first night, and went back at once to her full allowance of food which she took with a relish. There has been no return of symptoms. She is now over a year old, up to the normal in size and weight; is full of life and good spirits by day, and rests perfectly at night.

I trust that I have made out such a case against adenoids in infancy, that they will not be overlooked in the babies which come under your care.

"Adenoids in Infancy," Dr. Lewis W. Elias, Biltmore.

Dr. H. H. Briggs: A comprehensive review of this subject of adenoids in infancy, as stated by the essayist would require more time than is at our disposal. He has treated carefully the more salient points and so thoroughly that I shall mention them only to commend what he has said and endeavor, if possible, to further impress you with their truth and importance.

I wonder if anyone here is skeptical as to the existence of adenoids in infants, at birth, if you please. Fifteen years ago we wondered at adenoids in children of ten to fifteen years of age, and even now a great many of the profession ignore their existence, allowing children in their family practice to grow up with mouth breathing with the typical adenoid face, protrusion of the teeth of the upper jaw, with narrow deep palatial arch, pigeon breast, round shoulders; in fact, the entire role of symptoms pathognomonic of this malady. Careful observers, however, are awakening to this menace to the physical, mental and moral welfare of the child.

The essayist is to be congratulated, it seems to me, in being, so far as I know, the first one in this Society to call attention to the existence of adenoids in infancy and their danger.

Some of the classic symptoms of adenoids as seen in children may be absent or rather undeveloped in the babe. The adenoid face, as above described, has not had time to develop. There may not have been time for the incisors, if present, to protrude, and for the malformation of the arch of the palate; nor may the babe have acquired the ability to breathe through the mouth which it does not instinctively do. The malformation of chest and shoulders may also be in their incipiency. Acute otitis media or chronic catarrhal otitis media may not have manifested itself and the membrana tympani may as yet be unretracted.

Fretfulness, especially on nursing, or indication of pain during nursing or feeding should be carefully noted. Nasal discharge is most always due to adenoids and the associated condition of rhinitis. Otitis media in the babe is often a complication of adenoids and the accompanying pharyngitis caused by an extension of inflammation along the eustachian tubes into the middle ear. This sequalla is the more apt to occur in the exanthemeta, whooping cough, colds and influenza. So we may say that otitis media serosa and purulenta are usually

symptoms of adenoids, for they are in a great majority of cases, results of the adenoids by its mechanical and inflammatory interference with the eustachian tube.

Painful deglutition mentioned by the essayist is due to the rarification and condensation of air in the naso-pharynx during the act of swallowing. In this act the soft palate is held in apposition to the posterior pharyngeal wall and moves upward and downward much as does a piston in a cylinder. In this way the capacity of the epipharynx is first diminished and afterwards increased by this motion of the palate. In the normal pharnyx there is no disturbance of air pressure in the pharynx as a result of this motion, for the patency of the nostrils allows the air in the epipharynx to communicate freely with the external air and thus the air pressure in the pharynx is maintained constant. But if an adenoid and the accompanying nasal secretion blocks the nose, then there is alternatively increased and diminished air pressure in the epipharynx, eustachian tubes and middle ear. This is easily demonstrated on one's self by holding the nose when swallowing. The membrana tympani are drawn in and held in by the excessive atmospheric pressure in the external auditory canal until the rarefied air in the middle ear and eustachian tubes is augmented by a rush of air from the pharynx which the next act of swallowing without holding the nose will facilitate. This suction causes hyperemia, inflammation, excessive secretion and extreme sensitiveness and pain often to the extent that the babe refuses to take nourishment. Freeing the nostrils temporarily with a saline douche will frequently give relief for many hours.

The baneful effect upon nutrition and the general condition of the child is well cited by the essayist. The fact of the increased danger of contracting the acute infectious diseases due to the diseased pharynx, so receptive infectious germs and

for transmitting the same into the lymphatics should prompt us to a sense of our duty as clinicians.

The definite determination of adenoids in the babe is most difficult. Under one or two years of age it is not advisable to insert the tip of the index finger into the epipharynx, except as a last resort. The best and safest way to make the examination is with artificial light, a head and post nasal mirror, if a dark room is at hand, but if not, natural light, preferably sunlight, may be used. The child wrapped in a sheet to confine his hands is held in front of you by an assistant who also confines the child's legs and holds the face firmly. A second assistant places a tongue compressor far back on the tongue, giving plenty of illumination on the pharynx. A retractor in the left hand draws the soft palate forward, giving plenty of space for the small post nasal mirror to reflect a clear view of the entire vault of the pharynx. It may require two or three attempts to get a good view.

The time to operate for adenoids is as soon as possible after the diagnosis is made. The usual preparation of the patient for anaesthesia operations is necessary. Ether is the best anaesthetic in my opinion, considering the thoroughness of the operation, as well as the safety of the patient. Nitrous oxide gas is the next choice, the disadvantage being the lack of thorough relaxation of the jaws and throat as well as a constant degree of anaesthesia. The prone position of the patient I prefer to the semi prone, both for the convenience of the operator and anaesthetist, but especially because with it the blood may be prevented from flowing into the larynx. The degree of anaesthesia should be just to the point of thorough relaxation of the muscles generally, remembering that the reflexes of the larynx are about the last to become abolished, and that to obtain this might in some cases mean too deep anaesthesia for safety. I stand on the left side of the patient, the mouth gag being placed on the right side and entrusted to the anaes-

thetist. If an assistant is desired, he should stand to the surgeon's right. It is well to palpate the adenoid or view it with a mirror unless you are sure of its size and location in order to select the proper size curette. The Gottstein curette is the proper instrument for this purpose. The tongue should be depressed with a tongue depressor held in the left hand, the curette inserted behind the soft palate, the handle depressed until you feel the instrument impinge against the vomer to be sure you get in front of and above any portion of the adenoid high up on the vault. The curette is now pressed firmly upward, backward and then downward, using a rocking motion from side to side if you wish, severing the mass from its attachment. If it hangs by any shreds as it tends to do, it may be removed with forceps after it has fallen into the oropharynx. The curette should then be reinserted and turned to the side so as to press along the fossa of Rosenmueller of each side, being careful not to injure the mouth of the eustachian tube, yet being sure any attachment of the adenoid to the latter which may later interfere with the normal function of the tube, causing tinnitus and deafness, are cleared away. As soon as the mass is removed a gauze sponge, such as is used in abdominal surgery, carried in the long forceps, is pressed firmly against the soft palate, causing its complete closure against the posterior pharyngeal wall, will prevent any bleeding into the mouth and throat. The blood will rise in the nostril and overflow where you may observe its amount and, if excessive, can be completely stopped by holding the nostrils between the fingers, the clot being afterwards removed from the epipharynx. All bleeding should cease before the patient is removed from the operating table. The child is usually playful the next day and may be allowed to sit up.

REMARKS ON THE MANAGEMENT OF PYOTHORAX

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Medical men like all humanity are prone to follow leaders and along beaten paths. I am persuaded that this is done too frequently under certain conditions, as well as too seldom under others. Surgeons very often fail to obtain desired results because they undertake to treat the pathological condition without giving due consideration to the patient. Surgery as well as internal medicine was at first based upon empirical ideas. Almost in a night the entire surgical viewpoint was changed to a pathological one. The pendulum swung far, really too far in that direction. The advanced thinkers are now leading us to a clearer conception of the surgeon's work. We are realizing that there are other things aside from pathology to be considered in surgery. We are learning that the normal functions of the body are to be reckoned with. The era of "physiological surgery" as so aptly expressed by Morris, is dawning.

Following leadership blindly and with only the pathological in mind is strikingly illustrated by the generally recognized management of pyothoraxy. Some years ago surgical bell-wethers declared for what amounted to almost a wholesale removal of ovaries. In those days as someone so aptly said one was not in style gynecologically unless one carried a fresh ovary in the vest pocket. Fortunately for the propagation of the human race surgeons learned more conservatism, and many ovaries have been saved for future usefulness.

Some surgical leader imagined (I cannot believe that he did more than imagine) that the separation of the soft parts from

the bone was necessary in harelip operations; said the leader "to prevent undue tension and consequent sloughing of sutures." Coffins and visions of terrible facial disfigurement at once arose to frighten the timid. For years and years no one dared to think of doing a harelip operation without this very needless mutilation. Now many experienced surgeons (others are learning it) think that the cheek separation is not only not necessary but really adds a needless complication.

Pyothorax will run a parallel course in some respects. The masters teach that rib resection and drainage should be done always and some writers intimate that anything short of this should be condemned in language severe. Some of these classify pyothorax into three groups—acute, subacute and chronic, others in only two, acute and chronic; and yet practically from the viewpoint of case management they put all these cases in one group only—treat all in the same way. "The hand of iron in the rubber glove" is laid on all alike. Without due discrimination they declare in substance what is "sauce for the goose is sauce for the gander." The patient is apparently ignored and physiology is forgotten. The rule of rib resection and drainage is applied as rigorously as if it were a law of the Medes and Persians. Mr. Quilp was not more inflexible with his wife than surgical leaders have been in insisting on this procedure. Really should every case of pyothorax be continuously drained? I am sure not. Nearly all chronic cases had best be treated by rib resection and drainage or one of the more severe operations, but not so the acute and the so called subacute ones.

I view every case of pyothorax either as acute or chronic, the subacute, being one of degree only and properly belonging to one or the other class. The acute cases are best treated by thorocentesis, practicing irrigation of the pleural cavity in certain foul cases under favorable condiitons. It is often necessary to aspirate two or three times but even four to six

times or more is better than drainage. The pain and annoyance of repeated aspirations are really insignificant as compared to lung collapse as result of pleural drainage. The mixed infection which always follows with more or less severity the drainage operation is a powerful factor for evil and must be reckoned with. This very often turns the tide against a patient already weakened and more or less devitalized. Every experienced surgeon has noted the marked change in the character of the pus after a drainage operation, for example a pneumococci pleural infection. We all know that the saprophytic infection is most serious and how much more so must it be when engrafted on a pleura already engaged in a fight against almost overwhelming odds with for example, tubercle bacilli. Every experienced surgeon knows how dangerous is lung collapse from traumatic pneumo thorax when occurring in health. Much greater is its danger when it occurs in a body already weakened by sickness. Pulmonary pressure apparatus has not yet been brought to a stage of development which makes it entirely satisfactory, though I expect great things along this line.

Morris has called our attention to what he terms "points of resistance" in the human body. For illustration witness the rarity of oral wound infections. Tongue incisions always show primary union. On the contrary how dreaded are knee-joint injuries for the very reason of the lack of resistance there. The pleura is also a "point of weak resistance" to infection. It is impossible to sterilize the air which with inspiration and expiration passes in and out a pleural opening. A change from pneumococcal to a mixed infection is often noted in twenty-four to forty-eight hours. Is it best for the patient to add this burden to his rapidly becoming over-powering one? I think not. Simple aspiration correctly done entirely prevents this very dangerous complication. Personally

I prefer a dozen pleural aspirations to one lung collapse, to say nothing of one added saprophytic pleural inoculation.

The question naturally arises, how can an aspiration or a half-dozen aspirations effect a cure? By incidentally the same process as effect a cure in drainage. Metabolism is an old word now not much used, but I confess I like it. Simple aspiration or aspiration with pleural irrigation (to be practiced in some cases) unquestionably aids in re-establishing a pronouncedly healthy tissue metabolism. More than this it materially aids nature in re-adjusting the cell circulatory equilibrium and indirectly stimulating capillary circulation. More yet it revives and revivifies physiologically the lymph circulation. All this it does better than drainage and without the dangers attending drainage operations.

The human mind is so ingenious that it can argue and well for or against anything. So to be really convincing to the doubting one must present proofs founded on actual experience. What of the result of aspiration as compared to drainage in acute pyothorax. Mind you I do not take the position that chronic cases should be treated in all instances by aspiration, though it will undoubtedly do good in select cases even in this class. Neither do I claim that every acute case should be treated exclusively by thoracentesis. Aspiration deserves to be tried in simple uncomplicated (when the consitive factor has ceased or there is no communication with the outside) chronic pyothorax. It may or may not prove successful and simple drainage will often fail in these cases. Such cases call for more radical procedures, the discussion of which is not within the providence of this paper.

Thoracentesis in my hands has proven much more satisfactory than drainage and my results have been decidedly in its favor. Two or more aspirations are usually required. It is not often that I fail to obtain a cure after the third. It is my custom to repeat the seance on the third, fifth or seventh

day after the initial. It is a very highly satisfactory procedure in children and it has never failed me with the little ones. It is not so satisfactory in adults as in the children but even with them it is much better in my opinion than drainage in the average case.

The question of irrigation with aspiration is an important one. Properly performed it often does good—a great deal of good. It is not needed in more than 30% of cases. It is indicated in mixed or saprophytic infections and should be used when the surgeon is in doubt if surrounded by favorable conditions (in hospitals or when sterilized water and apparatus can be obtained). I prefer 1-8000 bichloride followed with normal salt solution. From every viewpoint my experience has led me from the timeworn text-book precedure of rib resection and drainage to thoracentesis with or without irrigation in treating all acute cases of pyothorax. My statistics are more favorable to the latter procedure.

HIPPOCRATES, SURGEON.

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In or about the year 460 B. C. was born a child who was destined to become in the years to come a great physician and surgeon. That Hippocrates was a great physician is amply proven by the high regard with which he was held by his contemporaries and, also, the enormous number of commentaries on his works, not only by medical men immediately succeeding him, but even that of the present day physicians. His writings constitute the oldest known medical works and when we take into consideration the crude state in which the science of medicine was, we can only marvel at the wonderful knowledge which he possessed. Indeed, his descriptions of various injuries and their treatment will hold good even at the present time, though thousands of years have transpired. This is almost incomprehensible when we remember that he had not the advantage of dissecting rooms which we in modern times enjoy. With such accurate knowledge, he had a gift which few of us possess; the faculty of expressing his thoughts in a clear and concise manner and at the same time, in terms remarkable for their extreme brevity. Few of us have such a gift at the present time, and none developed in such a degree as Hippocrates. His powers of observation were most acute and he accentuated the importance of prognosis in a high degree. This was an art which he assiduously cultivated, not only with benefit to his patient but to himself. Is it any wonder that Hippocrates is called even at the present time "The Father of Medicine?" Why should there be any cause for surprise at the wonderful knowledge that he enjoyed, which holds true even in the present age, when we consider what a keen and careful observer he was and his happy faculty of

being able to express his ideas so clearly? We boast of our greatly advanced science at the present time, but a careful study of the works of Hippocrates will convince anyone that we have not made such great progress after all, considering the years that have passed since his time. Hippocrates was not only "The Father of Medicine" but was the greatest physician that ever lived and will probably hold this distinction to the end of time. Let us now look into the reasons for terming Hippocrates a great surgeon.

We shall consider first his treatise on "Injuries of the Head." Practically this work is almost wholly taken up with the consideration of fractures of the skull and treats of these injuries in a very exhaustive manner. He opens his discussion with a brief description of the bones of the head which, while not accurate, exhibits a remarkable knowledge of the skull's anatomy considering his advantages of gaining it. Our author next takes up the different modes or types of fracture of which he recognizes five and describes them minutely. First, is a contusion or what we understand he means as a fracture of the inner table wherein an instrument not only "breaks the bone but occasions a contusion thereof more or less, both at the fracture and in the parts of the bone surrounding the fracture." Second, a fracture in which there is a solution of continuity in the osseous tissue yet it remains in its natural condition and position. Third, he describes accurately the depressed fracture and so classifies it. Fourth, the "hedra" or indentation of the bone or what we now term a fracture of the outer table of the skull, with no further injuries. Fifth and last, he describes the "fracture par contra coup" and acknowledge the surgeons' helplessness in such emergency.

He considers the different kinds of weapons with which the injuries are inflicted and, also, the variety of wounds of the skull such as a linear fracture, curved, etc., also, the manner in which they are sustained. He had no trouble in recogniz-

ing the high mortality of fractures of the base of the skull. The means of arriving at a true diagnosis of the various injuries are not overlooked. The indications for the operation of trephaning is discussed by him, showing that he was no novice in the operation. The method of trephaning receives a most accurate description at his hand. We must confess that his views are diametrically opposed to those of modern times, with the exception that he was an earnest advocate of the early operation. The injuries of children are separately taken up, because he recognized the difference between the bones of adult and child.

This work can well be termed a classic in surgery because even though thousands of years have elapsed, little has been added to it and we can still study it with profit to our patients and ourselves. In his work on "The Surgery" he principally takes up the treatment of fractures and similar injuries and along with this the art of bandaging the various parts of the body. Hippocrates opens his discourse by referring to the proper method of making a diagnosis by means of a comparison of the affected with sound sides. He next turns his attention to the preliminary essentials for an operation, although, he does not recognize the importance of asepsis and artisepsis. Of these matters he makes his views very plainly seen, things relating to the operation, the patient, the assistants, the instruments, the light, the position of the patient and of the operator. He even discusses the conduct of the operator and of the patient. The operator's hands are then given attention principally from the standpoint of acquiring dexterity, but not from a standpoint of cleanliness. His description of all the above subjects are discussed in such a masterly manner that it is no wonder that he was and is now regarded as having been a great surgeon.

Let us now look into his views on the subjects of "Fractures" and "Articulations" on each of which he wrote a book.

For the sake of convenience we will discuss both together on account of the fact that in each book he wrote upon both. Hippocrates recognized and described all the different fractures that we at this time do, and described each minutely. It is true that he did not always classify the different types of the same fracture, but in a great many instances mentioned such a type. Simple and compound fractures he discussed at length, also, the various angles at which a bone may be broken. His treatment of fractures will compare favorably with ours at the present time. Our author was well acquainted with the operation of resection of the joint where deemed necessary to obtain a useful limb for the patient. His knowledge of dislocations and their treatment was fully as extensive as that of fractures. No one can deny that little has been added to the general knowledge of fracture and dislocations which he expounded in these two treatises since that time. It is, indeed, remarkable how nearly his description of their symptoms and treatment surgically coincides with ours. He even describes the congenital diseases of the joints, such as hip joint dislocation and club-foot. His method of treating clubfoot corresponds exactly with our idea of its treatment, that of overcorrection of the deformity and the maintenance of same by means of some unyielding bandage. Extension and counter-extension and the usual manipulations were his methods of setting a fractured bone and dislocated joint. He also devotes a great deal of attention to the discussion of compound dislocations and their treatment. Not content with this he give an elaborate description of fractures by separation of epiphysis. Gangrene is recognized and a treatment is prescribed throughout these books.

In his book "Mochlicus" he merely repeats his views on fractures and dislocations expressed in "Fractures" and "Articulation." Nothing new is added to the literature of surgery

except that at the outset he gives a brief description of the anatomy of the bones.

The malignancy of cancer was thoroughly understood by him, and his famous aphorism, which is probably more often quoted than any other: "Those diseases which medicines do not cure, iron cures; those which iron cannot cure, fire cures; and those which fire cannot cure, are to be reckoned wholly incurable," was doubtless conceived as a result of his battles with this dread trouble. Empyema was treated by him in a manner that would bring no discredit upon any modern surgeon, incision and free drainage of the pus. That he understood calculus of the bladder and what should be done for its cure cannot be doubted for one minute as proven by reference to the "Oath." However it seems that in those days it was deemed beneath the dignity of the profession to operate for this trouble. Just why it is impossible to say. He understood the grave prognosis of injuries to the various vital organs as attested by Sec. 6, No. 18 of the Aphorisms. Tapping to remove fluids in dropsical conditions was not uncommon with him and he appreciated the gravity of the removal of too large an amount of water for a dropsical person or pus from an empyema in too short a time—see Sec. 6, No. 27 of Aphorisms. Even osteitis and periosteitis are described by our author and creditably treated. The almost instant death which follows the rupture of an internal abscess is cited in Sec. 7, No. 8 Aphorisms.

In his book on "ulcers," he has a very original way of classifying, in that he terms all inflammation of tissue as ulcers. Even deep seated abscesses are so termed, but a careful perusal of his account will make clear just what disease he is describing. Abscess of the liver is described by Hippocrates His treatment of ulcers compares favorably with ours at the present times, for instance he treats "deep seated ulcers" or abscesses by the application of hot fomentations and cataplasms

until the pus is formed in the tissues and then evacuates by a free incision. He enjoins absolute rest upon a person suffering with ulcer and especially those upon the lower extremities and treats chronic and indurated ulcers by either incising completely around the margin of the ulceration for the purpose of removing the hard indurated mass or by the application of the actual cautery to remove same. He even recommends bandaging in the treatment of ulcers. He gives various prescriptions for the preparation of powders, salves and ointments and enumerates the variety for which they are indicated. Can we in this day boast of any superior method of treating ulcers? Even an imprudent diet is deemed by him inimical to the healing of an ulcer.

"Fistula" covers entirely this subject. While his treatment cannot compare with ours, still is it very easy to see why a cure may be effected after a long tedious time? It consists in tying a ligature into the fistulous tract and allowing it by pressure to cause the intervening tissue between it and the rectum to slough out thus uniting the two. The after treatment when this is accomplished consists in the introduction of a tent composed of some caustic medicines which will produce a destruction of the chronically inflamed tissue in the fistula and allow the space to be filled by healthy granulations.

His book on "Hemorrhoids" would do credit to any modern author since his treatment corresponds to the recognized treatment of this day and time. The operations of choice with him were removal by incision and by actual cautery. This little treatise is only one among the many classics in surgery handed down to us by this illustrious man.

In conclusion, I beg leave to say that these wonderful works of Hippocrates have only been touched upon in a very superficial manner and in order to comprehend what value his writings have been to us, I commend the practitioner to the study of the exhaustive work written by Francis Adams, under the

auspices of the Sydenham Society of London, on the "Genuine Works" of Hippocrates. In it he places all of what he considers the genuine works of Hippocrates and each book is made to stand a severe test and pass the closest scrutiny before being admitted to such a place of honor. In this volume, Dr. Adams materially aids the student in thoroughly understanding and appreciating the true meaning of Hippocrates' various writings, by a very exhaustive preliminary discourse, and at the beginning of each book, he gives what he terms an argument which is nothing more than an explanation of each paragraph which is to follow. And to still further aid the careful student the works are elaborately supplied with footnotes to make clear what would otherwise be very obscure. When we consider under what disadvantages Hippocrates labored, where ignorance, superstition, fanaticism and quackery were in the flower of their youth and even in the face of all this, that he had the courage to shake himself free from these shackles and pursue his investigations with his mind untainted by these things and as his reward arrived at the truth; it is no wonder that we still today revere even the mention of his name. He was an independent thinker and a practical man who searched for the cause of the various infirmities of man, and when found did not hesitate to treat them in a most commonsense manner. It is our duty to venerate his name and memory because humankind and the profession owe to him a debt of gratitude which can never be repaid. Of him it can be truthfully said the world was bettered and benefited by his having lived.

SUPPURATIVE DISEASES OF THE KIDNEYS, INCLUDING RENAL CALCULUS, THEIR SYMPTOMS, DIAGNOSIS, AND TREATMENT.

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It is not necessary to spend much time in describing to you the location of these two very important intra-abdominal organs, but it will be well to mention the normal location of the two organs, as they differ somewhat in their position and relation to the various organs of the abdominal cavity. The upper border of the right kidney corresponding to the upper border of the twelfth dorsal vertebrae, the left corresponding to the upper border of the eleventh dorsal vertebrae. The difference in position is explained by the position of the liver forcing the right kidney downward for the distance of the thickness of one of the dorsal vertebrae. The kidney of an adult is about 4½ inches long, 2½ inches wide and an inch and one-half thick, with its outer convex border pointing outward, upward and backward, weighing from 125 to 200 grams, being surrounded by a dense fibrous capsule outside of which is the fatty capsule. I shall not enter into the histology of this organ at present. The function of the kidney which has undergone much discussion and is still being discussed, there being two theories, each having many strong supporters. The secretory and filtration theories. The normal amount of urine secreted by a healthy kidney is from 1500 to 2500 c c or about fifty-two ounces. The diseases of the kidney which I am about to present to you, as the title of this paper indicates, are suppurative diseases including renal calculus. These are the conditions of the kidney often called the surgical diseases of these organs and are due to the entrance of pyogenic bacteria into the renal tissues or surrounding structures and are charac-

terized by fever, pain in the side and pyuria. I speak of the suppurative diseases of the kidney viz., pyelonephritis, pyonephrosis and perinephritic abscess.

Perinephritic abscess is a suppurative inflammation of the fatty fibrous envelope of the kidney. It may be primary or secondary following trauma, sprain or infection from the kidney or it may be secondary to renal calculus, tuberculosis of the kidney, diseases of the appendix, liver, gall stones, etc. Symptoms of perinephritic abscess are gradual in onset with a history of abdominal injury or intra-abdominal disease and is marked by fever, tenderness over the kidney, flexion of the thigh of the corresponding leg, a marked tenderness to favor the diseased side, painful extention of the thigh and in advanced cases a palpable tumor in the region of the kidney. All symptoms grow gradually worse, the loin becomes perceptibly enlarged, the tumor is easily palpable, fluxuation and edema of the overlying skin. Diagnosis is based upon the inability of the patient to extend the leg and when forcibly done causes great pain. When standing the body is bent forward to the diseased side with rigidity of the abdominal muscles and tumor in the side. The urinary findings are usually negative. Resolution, incapsulation or rupture is very rare and not to be expected. Early operation gives the best result and the longer the operation is delayed the more unfavorable the result. The treatment is posterior incision, abscess located and free drainage instituted. In my experience this treatment has given very good results. I have treated three cases within the past few months of several weeks' standing, by posterior incision, thorough exploration of the cavity by means of the finger, rubber tube used for drainage and am glad to say that such treatment gave complete and as yet permanent relief. The wound closing by second intention without urinary fistula.

Suppurative pyelo-nephritis: This, as you all know, is a suppurative inflammation of the pelvis of the kidney, caused

by trauma, kidney infection or tuberculosis of the kidney, but by far the most common cause is that of ascending infection from retention cystitis as a result of stricture of the urethra, hypertrophied prostate, etc. This disease is characterized by the presence of pus in the urine, a septic temperature, tenderness over the kidney with little or no enlargement of the diseased organs. The disease is usually bilateral, most marked in one kidney. I have been well impressed of this fact recently by a case referred to me by Dr. Liles of Elizabethtown. The patient I speak of is twenty-two years of age, married five months. Has specific infection of the bladder and urethra of gonorrheal origin of five weeks' duration. One week ago she began suffering severe pain in the region of the right kidney with localized tenderness over the kidney and a sense of soreness along the course of the ureter, fever oscillating around 101, nausea and vomiting. The left kidney showed similar involvement but of a very mild character. The urine containing considerable pus with very few blood cells. The picture of this case is that of an acute suppurative pyelonephritis, proven by ureteral catheterization with the escape of pus from the right kidney. This case would differ from the picture seen in chronic diseases of the same character in that there would be more marked systematic symptoms, urine containing more pus, pyuria often being intermittent with an appreciable tumor on the affected side. The pathology of this disease is nothing less than abscess formation of the kidney of gradual development, all symptoms increasing in severity as the pus collects. As soon as the pus is discharged from the kidney, all symptoms are immediately relieved, while the urine is loaded with pus. This is the usual type of cases, while there are few cases which run a more steady course, due to poor drainage of the kidney. This is especially true in cases secondary to renal calculus or ureteral calculus. In some cases the symptoms will be confined entirely to the kidney. The pain varying

from a slight soreness to that of excruciating pain or renal colic. The termination of such a condition depends upon the ability to secure drainage of the kidney by treatment of the lower urinary organs. If the disease is allowed to progress without medical attention, it will sooner or later result in total destruction of the diseased organ.

Pyonephrosis is only an advanced state of the suppurative inflammation of the kidney just described, being secondary to renal calculus, tuberculosis of the kidney or obstruction of the ureter. This condition presents a group of symptoms similar to those seen in pyelonephritis, only of a more severe type. The urinary septicemia being pronounced with high fever, sweats and rapid loss of weight, with pain in the side. There may or may not be an appreciable enlargement of the kidney. The urine is loaded with pus and on further examination of the case with a careful history, stricture of the urethra or a hypertrophic condition of the prostate gland will be found. Such a condition if allowed to progress, will terminate fatally, as a result of sepsis, suppression of urine, rupture into the neighboring viscera, etc. The differential diagnosis from that of pyelonephritis is impossible short of operation. The diagnosis of suppurative diseases of the kidney is based upon the following facts; a history of trauma to the kidney, a history of the disease of the lower urinary or pelvic organs, ureteral, vesical or renal calculus. A septic temperature, pain and tenderness in the side in the region of the kidney with or without a palpable tumor, the presence of pus in the urine with a careful cystoscope examination of the bladder, with catheterization of the ureters and the entire urinary tract skiagraphed.

Treatment of Kidney Infections. Of these we have two varieties, the ascending and descending. The ascending infection may be prevented by careful attention to the treatment of stricture, hypertrophied prostate and vesical calculi,

cystitis, etc. One can do much in preventing the descending infection by careful attention to the bowels, especially in pregnancy, flushing the kidneys and administering urotropin during typhoid and eruptive diseases. This, as you know is usually due to the common colon bacillus. Pyelitis or pyelonephritis, not due to stone, tuberculosis or retention and not complicated by sepsis is treated in the following manner. Hexamethylenamin in ascending doses. Daily examinations of the centrifuged urine to ascertain whether or not the kidneys are draining freely or whether the pus is collecting in the kidney. Abundance of spring water in which lithia tablets are dissolved. This treatment in my experience has given very good results in pyogenic infections other than those caused by the common colon bacilli. This bacillus being more rebellious to treatment than that of the other pyogenic organisms. I have never practiced pelvic lavage in this type of cases and do not think it necessary. If the patient improves on the above treatment, it should be continued for several weeks. Renal lavage gives best results in the chronic stages of this disease. If the above treatment fails to bring about an improvement of the condition, one of two things may be done, patient must either submit to operation or do nothing. Of the two the latter is preferred. Statistics show that such affections of the kidneys do not injure the life of a patient as long as the disease remains in a quiescent state. Patients having lived to die of old age who have suffered with such diseases for thirty or forty years. During this time not suffering any marked discomfort or injuring the general health, to a serious degree. Operation on the other hand offers a somewhat uncertain result. If operation is undertaken, it should be with a deliberate intention of freeing the renal pelvis, decapsulating the kidney and if necessary perform nephropexy. Nephrotomy should not be performed unless required in the search of stones. But this operation affords no satisfaction

as to promise of cure and should be undertaken only under exceptional circumstances.

Suppurative Pyelo-nephritis. The inflamed kidney may be considered an abscess cavity, the treatment of which is drainage and irrigation with an antiseptic fluid. Suppurative pyelonephritis not calculus or tubercular in origin may sometimes be relieved by the same indirect method of drainage that applies to catarrhal inflammation, as is frequently seen secondary to cystitis, due to prostatic retention, stricture, etc., but often vesical drainage does not suffice and in order to secure sufficient drainage of the kidney, nephrotomy must be performed. The treatment of descending pyelonephritis is the same as that of ascending, less the treatment of the lower urinary tract. Pyonephrosis, if seen early is treated in like manner, but is usually seen in the advanced stages of the disease, the septic condition requiring immediate, direct surgical attention. Before operation every effort should be made by means of functional, renal diagnosis to ascertain the functional capacity of the opposite kidney. If the opposite kidney is functionally competent, the pyonephrosis may be attacked either by nephrotomy or nephrectomy. If the opposite kidney is incompetent to take on the work of both kidneys, only nephrotomy may be contemplated. There is much discussion on the comparative merits of nephrotomy and nephrectomy in the treatment of suppurative diseases of the kidney. Nephrectomy may be primary or secondary, there are advantages on both sides. Primary nephrectomy subjects the patient to severe shock while in a state of profound sepsis. Nephrotomy in such cases will relieve the septic condition and allow the patient to rally from his general debilitated condition and make him a much more suitable subject for nephrectomy. If secondary nephrectomy is performed before the adhesions become organized, they will not interfere to a great degree with the performance of nephrectomy. We may

say that nephrectomy is indicated in grave septic or uremic conditions. If ureteral drainage is impossible and when the kidney is hopelessly damaged, nephrectomy primary or secondary should not be thought of until it is proved that the opposite kidney is capable of supporting life, such are the general rules that must guide the surgeon.

Treatment of Infection Complicating Retention. The urinary septicemia manifests itself by urethral chills and is best treated by prophylaxis, the essentials of which are gentleness in manipulation, irrigation of the urethra and bladder at the end of every important urethral operation, proficient drainage according to the nature of the case. Urinary antiseptics, dilution of urine and stimulation of the kidneys and other eunctories. For urethral chill when it has once set in, rest in bed, thorough purgation, liquid diet, urinary dilution and urinary antiseptics, hot packs, stimulants and cups applied to the loins. Retention and suppuration are to be relieved by drainage which consists of catheterization, urethrotomy, systotomy or nephrotomy, as the case may indicate. Irrigation and the administration of urinary antiseptics with stimulation of elimination.

Stone in the Kidney. Very few words are necessary concerning the pathology of this disease. Stone formation may occur anywhere in the kidney substance, usually in the upper or lower pole, in the pelvis of the kidney or in the urinary ducts. There are many instances of stone in the kidney substance which have gone to autopsy with a negative history concerning the symptoms of this disease during life. Stones may be present for a number of years without symptoms or may produce symptoms as soon as the formation of the stone occurs and reaches sufficient size to produce local irritation, this is true especially of stone in the pelvis of the kidney. The prominent symptoms are initial hematuria, frequent and painful urination, acid pyuria, renal pain and tenderness. The

initial hematuria is usually slight, the patient passing a very small quantity of blood, only giving a blood tinge to the urine or maybe microscopic. When the patient is put to bed the hematuria usually disappears. It is usually made worse by exercise and diminished by rest. Red blood cells may not be found, hematuria is by no means constant in renal colic. Frequent and painful urination, associated with blood in the urine are usually the first symptoms which lead the surgeon to suspect renal calculus. The urinary disturbance is most marked during an attack of renal colic, passing very small quantities and may or may not be blood tinged. Pus in the urine is not a constant symptom and a patient may suffer for a number of years with renal calculus without the presence of pus in the urine. The pain in this disease may be from a sense of soreness to that of agonizing pain or renal colic. The pain is often reflex and in some cases it is difficult to tell exactly upon which side the stone is located. I have been well impressed with this fact during the past three months. A patient was sent to me, a dentist by profession, giving a history of renal calculus of three years' duration. He, himself, could not say upon which side he suffered more. He often suffered pain of severe character on both sides with very little difference in severity. This bilateral pain as a rule is due to increased functional activity as a result of the toxemia, due to insufficient function of the diseased organ, throwing more work upon the healthy kidney of the opposite side or it is the result of bilateral disease of the kidney. Calculus aneuria is a condition caused by the obstruction of the overflow of the urine along the course of the ureters. Characterized by marked septic phenomena with a partial or complete retention of urine and profound mental disturbance. *The diagnosis of renal calculus* is based upon the following facts. The presence of blood in the urine without or with pus. History of pain of an agonizing character, sudden in onset radiating down the course of the ureters and lower or-

gans, usually disappearing in the same nature as its onset and lasting from a few minutes to several hours or days, accompanied by nausea and vomiting and in obstructive cases by fever, chills and sweats. In such a condition the surgeon must not be satisfied with making a diagnosis of the presence of stone, but the number, position and distribution of stones, the presence or absence of renal infection and the functional capacity of both kidneys must be ascertained. To do this one must be familiar with the use of the X-Ray and the ureteral catheter.

Treatment, Palliative and Symptomatic. Palliative treatment of renal calculus is essential under the following conditions. During an attack of renal colic, during an attack of anuria and during a period of quiescence. In renal colic the first indication is to relieve the pain, this is accomplished by administering large doses of morphine hypodermically or morphine and atropin and in some cases will be forced to use a little chloroform or ether inhalation from time to time. Hot applications to the loins and the patient kept as quiet as possible in bed. In the meanwhile every drop of urine passed should be collected so that the presence of anuria, whether bilateral or unilateral which is ascertained by the use of the ureteral catheter is present, should be considered the main issue. In the absence of anuria, the pain may be palliated until it ceases.

The patient and the attendant should always be instructed to notice carefully for the passing of the stone in the urine. If after the attack disappears, localized tenderness continues in the region of the kidney, it may be conceived that the stone is still lodged in this region, whereas if it has become lodged in an attempt to pass through the ureter, the pain will be lower down and in the same region there will be localized tenderness. If a patient should pass a stone or several stones, the surgeon should always advise the patient to be skiagraphed

for other stones, which usually remain. Calculus anuria is relieved by stimulation of all the secretory organs, hot applications to the loins and if possible dislodgment of the stone producing the obstruction to the flow of urine. The treatment during the period of quiescence depends upon the character of the case. First, in those patients who have not passed the ureteral calculus but have had renal colic. Second, patients whose renal calculi have remained silent in the pelvis until they have attained considerable size and produced grave suppuration of the kidney. In the former if a ureteral calculus, having caused a renal colic remains in the ureter and the radiography shows its transverse diameter not to exceed one centimeter or one and one-half centimeters, every effort should be made to encourage its passing by drinking abundance of water and in some cases oil injections into the ureter. Although these usually fail, one-half of such calculi pass spontaneously and it is well to await their discharge for fully six months. If the radiograph from time to time reveals the fact that the stone is passing towards the bladder the prognosis as to passage of the stone is favorable. If the radiograph reveals an incrusted condition of the stone, there being a history of repeated attacks of colic and the stone found to be in the same position, showing it to be immovable or if the stone is too large to be passed, operation is indicated. A suppurative kidney containing a stone too large to be passed through the ureter or containing a number of stones, requires immediate operation, provided the function of the opposite kidney is normal, but if the stones are found in both kidneys, the functions of both organs being impaired, the risk of the disease is less than would be for the treatment of such a condition. But if it is found by ureteral catheterization that one kidney is functionating fairly well, it is wise to operate upon the worst kidney and when the condition for the patient will permit of it, operate upon the opposite kidney. The mortality

following the removal of stone from the kidney or the ureter in the absence of infection, is from two to four per cent. Operation for stone accompanied by infection and suppuration of the kidney has a mortality from twenty to twenty-five per cent. Nephrotomy for calculus anuria fifty per cent. One can readily see from the mortality of early and late operations the importance of early diagnosis and the removal of stones from the kidneys before suppuration has ensued.

CONGENITAL HAEMANGIOMATA.

Dr. Henry Norris, Surgeon to the Rutherford Hospital.

Synonyms Angiomata, Naevi. The consensus of opinion seems to be that all haemangiomata are present at birth but often are not noticed by the parents or nurses until some weeks later. This is especially true of the deeper varieties and of those occurring in fat children; hence it seems proper to designate all these conditions as congenital.

Haemangiomata are vascular tumors composed of capillaries, veins or arteries with a certain amount of connective tissue as a framework, and in some cases with an abundant nerve supply. According to the character of the vessels that make up the tumor Nicholls subdivides them into haemangioma simplex (telangiectasia) in which there is an excessive development of capillaries with a relatively scanty formation of arteries; haemangiomata arteriole, composed principally of small arteries with a relatively small proportion of capillaries and veins; and haemangiomata cavernosum, in which there are large vascular spaces or sinuses lined with endothelium.

They are usually found in the skin and subcutaneous tissues but may occur in the heart, kidney, spleen, uterus, intestine, bladder, muscles, bone, breast and brain. Of the histogenesis Nicholls says that they are met with in situations corresponding to the embryonic lines of fusion, such as the facial and brachial clefts and that the angiomata found at the orifices of the body, in the face, neck and upper part of the breast are of the nature of fissural haemangiomata.

Many of them are at first little more than telangiectases but after a more or less prolonged period of latency they may increase in size. Other haemangiomata appear to have some relation to the nervous system, beginning as small red spots

on the skin and gradually spreading over an area corresponding to the peripheral distribution of some cutaneous nerve.

Thomas has called attention to the part that physical and mechanical principles play in determining the origin and development of haemangiomata, and has shown that an increase of blood pressure so that it exceeds the normal will result in the production of new capillaries. This observation would seem to justify the assumption that high maternal blood pressure during pregnancy may act as a causal factor in producing haemangiomata.

These tumors vary in size from the smallest birthmark to large cavernomata involving an entire extremity as in a case of my own or as in cases reported by Ferre in which the whole upper half of the child's body was involved, and one reported by Adamson in which the tumor occupied the whole right lumbar region of a girl aged ten years. They occur most frequently on the head, next on the trunk and then on the extremities. It is not uncommon to have quite severe hemorrhages from erosions or ulcers. Very rarely cicatricial contraction takes place in them and a retrograde process ensues by which they may completely disappear. Sarcomatous degeneration has been noted.

Fitzwilliams, who has written a paper based on an analysis of seven hundred children with naevi most of whom were seen at the Great Ormond Street Hospital for Sick Children, comes to the following conclusions: That females are affected more frequently than males. That naevi are almost always present at birth and only comparatively few appear at a later date, the exceptions to this rule being spider marks and deep seated naevi. That naevi usually start on the surface and less frequently in the deeper structures, and that their extension and growth is intimately connected with the nerve supply of the part.

Of Fitzwilliams series of cases forty-nine per cent were situated on the face, scalp or neck; twenty-nine per cent on the trunk; twenty-one per cent. on both limbs (of the latter twelve per cent were on the upper limbs and nine per cent on the lower).

The following reports are of some of the more unusual situations. R. Cassirer and R. Muhsam report a large angioma of the brain successfully removed and cite three cases of Krouse's. In all four cases the course was slow and the symptoms were those of Jacksonian epilepsy. In each case there was a history of slight trauma in childhood. E. Banin reports a case of racemose angioma of the brain successfully removed. Fitzwilliams quotes three cases recorded by Cushing of port wine marks on the face associated with epilepsy, in two of which the dura was found to be involved on trephining. J. Bondy reports a case of angioma-sarcoma of the liver in an infant in which the diagonsis was made by exploratory laparotomy and microscopic section. There was a progressive enlargement until death occurred at three and a half months. Israel records a case of cavernous angioma of the liver successfully operated on, in which the diagnosis was made prior to operation by the disappearance of the swelling on pressure which he considers a pathognomonic sign. H. O. Pantzer records a case of angioma of the uterus, bladder and broad ligaments treated by ligation. MacGowan reports three cases of angioma of the papillae of the kidney successfully treated by conservative operations in which the kidney was saved in each case. Ryerson reports a case or angioma of the larynx and refers to some others. His case was treated by radium. Klinedist reports a case of angioma venosum of the orbit cured by injections of alcohol. P. Harrass and W. Spuchier say that there are a dozen cases of primary angioma of the parotid in literature. They report a case successfully excised. A. J. Gilmour reports a case of

cavernous angioma of the neck which was noted at birth. J. B. Carnett reports two cases of angioma of the neck successfully removed by excision.

Treatment. In the treatment of Haemangiomata liquid air, carbon dioxide snow, radium, X-rays, high frequency spark, galvano-puncture, electrolysis and the mercury quartz lamp have all been successfully employed, whilst injections varying from boiling water to Piazza's liquid have been used. Friedlander is a warm supporter of carbon dioxide snow, the credit for which he gives to Pusey. It is cheap, easily applied and comparatively painless.

Piazza's liquid is composed of water fifteen parts, perchloride of iron (30 per cent. solution) fifteen parts, chloride of sodium four parts. The injections should be made gently, five or six drops at a time. I have used with good results in several cases boiling water as suggested by Wyeth some years ago, but am of the opinion that no injections whatever should be made except in the most superficial haemangiomata, where compression is possible, on account of the danger of embolism. In extensive cases operative interference is not only justified but is indicated.

Case Report. The following is a report of the most extensive case that I have ever seen and in which amputation was deemed necessary to save the child's life.

M. W. L., female, aged five years and three months, was referred by Dr. Lee of Lattimore, N. C. No family history of any similar condition. No hemophilia. Normal delivery. At birth Dr. Lee noticed that the left leg up to the groin was swollen and that the superficial veins were enlarged. The mother gave the inevitable history of maternal impression. The child was first seen by me in August, 1910, when she was three years old, and my notes of that date are as follows: "Small, poorly nourished; visible mucous membranes pale; heart action rapid, 160 to 180; haemic murmur. The left

leg from toes to groin is from two to three times as large as the right. The entire leg is dark bluish red in color and warmer than the unaffected side. Enormously dilated veins irregular in their outlines are easily seen, and from the phalango-metatarsal junction to a point two inches below the head of the tibia there is a soft, compressible tumor having a pronounced thrill. A few inches below Pouparts ligament there is another angiomatous mass measuring one and one-half inches by three inches. Below the knee the whole leg seems to be practically one large tumor and is everywhere soft and compressible." Amputation was advised, and declined by the parents.

On January 3, 1912, the patient was admitted to the Rutherford Hospital on account of severe hemorrhages from several small necrotic areas on the dorsum of the foot and on examination it was found that the condition in the thigh had greatly improved, and that there was no thrill or bruit above the knee. The child complained of no pain except in the toes. Over the upper part of the tibialis anticus muscle there is an elongated prominence with a thrill and bruit; a thrill can also be felt over the dorsum of the foot, the ankle and part way up the inner side of the leg. The foot is very much swollen and around the second toe there are several ulcers extending to the dorsal and plantar surfaces. There is superficial gangrene of the second and third toes. The skin varies from red to reddish blue and the tumor mass can be increased in size by pressure applied above the knee. The skin shows numerous small vessels but the tumor involves principally the deeper structures. The leg is very flabby and the child cannot bear any weight upon it.

As the child showed very markedly the effects of hemorrhage and her haemaglobin was only forty-five per cent she was kept in the hospital for nineteen days before operation.

On January 22, 1912, a circular amputation in the lower third of the thigh was performed. All the divided vessels were the size of an adult's. There was practically no shock, as the leg had been made bloodless by elevation and an Esmarch's bandage. Convalescence was uneventful and the child was discharged from the hospital on the 20th day.

No sections of the amputated leg were made as it was presented to the Museum of the College of Physicians of Philadelphia.

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THE PRACTICAL USE OF IODINE FOR THE PREPARATION OF THE SKIN IN OPERATIVE CASES.

Drs. D. W. and Ernest S. Bullock, Wilmington.

Throughout the daily work of the surgeon the most continual source of apprehension is the preparation of the area about the site of the operation. This important task is generally allotted to the assistants, in many cases nurses, and is often out of the supervision of the operator.

Fear of injuring the skin and preventing primary union makes us avoid the use of powerful germicides, yet (the disinfectants that are without danger are generally without value).

In our country bi-chloride of mercury, preceded by soap, water, alcohol and ether, is without doubt the most popular method of preparation. That it should have enjoyed its past reputation and given the moderately good results that have followed its use, is more than probably due to the mechanical cleansing and the use of alcohol somewhere in the process.

That Bin Iodide of Mercury is not to be credited is forcibly shown by the work of Post and Nicoll (1), who, inoculated tubes of the Bin Iodide of Mercury and making cultures at one, ten and thirty minutes find that streptococci pneumococci and gonococci were alive after a half hour's immersion in a one to two thousand solution. These workers were rather surprised to find that when reduced to one-fifth this strength the solution was equally germicidal in its action. With these facts before us we could hope to gain little by pouring such solutions over the skin.

Since Grossich (2), showed the use of Iodine to give better results than soap, water and mercurial antiseptics much attention has been given to this subject. However, (the use of Iodine is not as general as the value of the agent would war-

rant). Since his initial report, Grossich has collected two thousand, two hundred and eighty-four operations showing excellent results from Iodine disinfection. He simply paints the skin with ten per cent solution (Official Italian Tincture), a few hours before operation. A sterile dressing is applied and after the patient reaches the table the coating of Iodine is repeated. The hair is not removed and no soap or water is used. The process is simplicity itself and its originator contends that any variation is without advantage and merely complicates the technique.

(When Iodine is applied to the skin, Laiacono (3), has shown that it rapidly permeates its layers and diffuses into the subcutaneous tissues. This affords opportunity for contact with the organisms dwelling in the lower strata of the skin. Mercury is deprived of this action, for when in contact with the skin a coagulum is formed and this, with the swelling of the cells in the presence of water effectually prevents the permeation of the mercury into the lower layers of the skin).

Having attained the organism, (Post and Nicoll (1), find that dilutions of Iodine, one to four hundred kill virulent streptococci in less than one minute).

In using the agent each operator seems to be a rule unto himself, (Jewett (4), washes, shaves, dries, then paints the skin with a seven per cent tincture and reports that he "has not had a single wound break down.")

(Having seen a single application of Iodine cause a severe dermatitis, Stretton (5), reduced the strength to two per cent and closely followed its use in fifty-one of his clean cases. These patients ranged in age from two to eighty-four years. In all there was a total absence of inflammation, suppuration, stitch abscess or discomfort on the part of the patient). His technique was as follows: A few hours before the operation, without any previous preparation, the skin is

painted, allowed to dry, then covered. This is repeated after reaching the table and again when the skin sutures are introduced so that these punctures may bring no infection to the surface. On the eighth day these sutures are removed and the remaining perforations are painted again.

Iodine disinfection was probably first used in this country by Cannaday (6), in 1905. Beginning with a very complicated technique in which Iodine did not play a prominent part he, from year to year, eliminated the unnecessary details until at present three coatings of a ten per cent Iodine are applied. The first on the preceding day, after a soap and water washing, the second early the morning of the operation, the third after the patient reaches the table. "Infrequently" this operator has "seen a fine vesicular eruption follow the use of Iodine on the skin." The lesions were never severe and promptly disappeared.

Going back to the more simple method of Grossich, Gibson (7), applied one coating of a seven per cent tincture after the patient reaches the table, no previous preparation having been made. After more than a thousand cases he concludes that the results have been "uniformly good." The only infections having occurred in "some salpingitis cases with large abscesses," these cases having always given him some "trouble with wound healing." This writer refers to a surgeon who stopped the use of Iodine because it "prevented judging the tension produced by tying the skin sutures."

The use of the agent in a few cases would suffice, we believe, to show that there is no practical ground for this objection. (Further objection is suggested by the possibility that the Iodine might be carried from the skin into the wound and peritoneal cavity where it might prevent primary union and cause plastic adhesions. While this conclusion is plausible, in actual use this does not occur).

(In instances where the peritoneum contains pus, Dannreuther (8), uses sponges wrung from a one to two hundred and fifty-six solution of Iodine, and irrigates the cavity with this solution and after closing the peritoneum, the wound is flooded with this mixture). Drastic as this procedure may appear. (After being used in "A large number of cases extending over three years its user attests that 'he' has not had a stitch abcess or other trouble at the site of the wound.") The small amount of Iodine that might pass into the wound would be slightly disinfectant and in the above instances where the wounds were filled with Iodine, of a strength, double that necessary, to kill organisms in less than one minute, the edges healed promptly.

In accident wounds Iodine stands out in bold relief. Major Woodbury (9), uses an irrigation containing one teaspoonful tincture of Iodine (U. S. P.), to a pint of water and among other brilliant results shows the germicidal power of the solution by cases of extreme necrosis showing no suppuration when this solution was used.

The actual germicidal power of the agent is perhaps best shown by the work of Turner and Catto (10), who, after the incision of the skin removed a thin strip extending through its entire thickness. These were transferred to tubes and cultured for organisms. This was repeated in thirty-two operations covering the more common surgical affections. Six of the cultures revealed organisms the Staphylococcus Albus was present in each instance; three of the sections were from the groin. Despite the presence of the organisms the wounds all healed by first intention attesting to the lowered virulence of the unskilled bacteria. After reviewing their work these observers advise that the surface be washed and the hair removed before the application of the Iodine.

A method combining many advantages in that of McDonald (11), whose technique is as follows: The night previous to

the operation the surface is washed, shaved, rinsed in alcohol followed by Bichloride of Mercury dried and covered with a sterile cloth. On the following day, after the patient has reached the table, the abdomen is painted for about one-half a minute with a solution of Iodine that is original with this operator. The Iodine combination is based upon the work of Laicono (3), which showed that Iodine penetrated the epidermis more slowly in an alcoholic solution than was the case with some more active fat solving agent. After a series of experiment this observer concludes that Carbon Tetra-chloride (CCL_4) penetrates the skin most rapidly, moreover, it is non-irritating and slightly antiseptic. The McDonald solution consists of Carbon Tetra-chloride 98 parts and tincture of Iodine two parts and after testing it for three years he has had no suppuration of the skin.

While working (Ernest S. Bullock) in the clinic of Prof. Randolph Winstow the Iodine technique was installed and its superiority soon became proverbial among those associated in the work.

The solution that has found most favor at our hands is of three and a half per cent. We have, however, used sixteen per cent Iodine without harmful effects. In all particulars we have found it vastly superior to the older methods of preparation.

In conclusion: (We believe that the Iodine technique is the best in use today. It is most certain and convenient to the operator, and least offensive to the patient. Solutions of ten per cent and higher may be used without harmful effects, but the solution is equally effective when weakened to two per cent. In instances followed by dermatitis recovery is prompt, without treatment. The simplicity of the procedure arouses doubt but its use will inspire your confidence).

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DRAINAGE OF AN INFECTED KNEE JOINT WITHOUT SUBSEQUENT ANKYLOSIS. TWO CASES.

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Several theories have been advanced recently which materially alter our previous conception regarding drainage of cavities lined by endothelial cells. Dr. John B. Murphy, of Chicago, is the chief exponent of the theory which is based upon his observation of natural phenomena, that a large joint, if but exposed to the air for any length of time, and not necessarily traumatized or infected, is most likely to become through the drying and ultimate destruction of these same delicate endothelial lining cells, the seat of ankylosis. In considering this theory from a practical point of view, two cases have been treated by me, in which the knee joint was exposed to the air for a number of hours as well as infected, without untoward results.

Case 1.—A girl of eight years, as she was running around a corner of the house, hooked her knee on a rusty nail and tore the right knee joint open through the lateral ligament. The joint was searched by an unwashed hand and sown tightly shut. Twelve hours later the child was brought to the hospital and the joint was reopened, a number of blood clots washed out and the lateral incision again closed. Drainage was placed high up beneath the tendon of the quadriceps muscle and brought out through the fascia lata higher up and somewhat posteriorly. The foot was elevated eighteen inches and a straight posterior splint applied which extended from the ankle to the gluteal fold. No extension was used.

In three weeks all suppuration had ceased and passive motion was begun by allowing the child to use her limb. In six weeks one hundred per cent of motion had returned.

CASE 2.—Young man was 22 years, while sawing shingles, slipped and fell into the saw. The circular saw instantly removed the articular surface completely from the external condyle and traveled through the patella, chewing up the ligament of the quadriceps femoris, where the saw emerged from the patella. The popliteal vessels and nerves were not injured, but had a close call. Only one-half of the articular surface remained on the femur. The patella was cut through obliquely and consequently was drilled and wired with silver wire in two places. The ragged wound was closed by interrupted silkworm gut stitches. Drainage was carried out of the joint at its highest point beneath the quadriceps femoris tendon and through the fascia lata somewhat higher up the leg and more posteriorly. The limb was placed upon a posterior splint and the foot elevated eighteen inches.

Suppuration lasted four weeks. The result was better than I expected, three months after injury, twenty-five per cent of motion was had, just through ordinary exercise of walking. The boy now has a very serviceable leg. It might be noted that the articular surface which was removed by the saw, was brought to the hospital several days later, but could not have been used owing to the oncoming suppuration.

These two cases bring up the following points for discussion:

First. That the endothelial lining of the joint can be exposed to air and recover its function. It was so exposed between six and eight hours in the second case.

Second. That the joint can be traumatized internally and recover.

Third. That the joint can be infected and recover.

Fourth. That the joint can be drained any length of time necessary, without materially altering its function.

Fifth. That the presence of pure silver wire does not necessarily, even in extensive suppuration, act as a foreign body.

There is no doubt that with sufficient exposure to the drying influences of the air, the endothelial lining of any of the serous cavities of the body will become materially modified, but that the exposure necessary to produce such a condition is greater than the time consumed by an operation, is well illustrated by the foregoing cases.

What takes place in a serous cavity after traumatism and superimposed infection, has been clearly set forth by Professor Adami. At first the joint weeps, and if the joint secretion were to be collected, it would be found to have a specific gravity of 1010 or less, and contain one per cent or less, of albumen. This is a true hydraemic condition and will be absorbed if let alone. A more severe traumatism might produce a venous stasis within the joint, then the fluid from the joint would be found to have a specific gravity of 1010 and contain about three per cent of albumen.

However, if the aspirated fluid from a serous cavity contains four per cent albumen and has a specific gravity of 1018, it will also contain cells and possibly bacteria. The condition becomes a surgical one, as the lymphatics will be locked by so heavy a fluid, and while its watery portion may be absorbed, the detritus and fibrin will remain to form a foreign body. Consequently while the conditions of our second conclusion (that the joint can be traumatized internally and recover), may be reduced by rest, elevation and cooling lotions, those of our third (that the joint can be infected and recover), require surgical intervention, to overcome a mechanical obstacle.

My method of operating on the knee joint is exactly the reverse of other methods in vogue, and is applicable to joints

which have been opened by traumatism or by selection. In case of traumatism the original wound is always closed, and the joint treated as described. I make an incision through the skin at the upper level of the bursal sac, which lies beneath the tendon of the quadriceps femoris muscle. This bursa generally extends two and one-half inches above the upper margin of the patella. This flap is then turned down, the joint opened through the external ligament, ligating any anastomosing arterial branches, and the patella turned to the inner side. Flex the knee if better exposure of the joint is needed—the patella being dislocated internally and upside down by this flexion. With this exposure, all balls of florin—the "joint mouse" of the Germans—can readily be removed.

With the reduction of the parts, the capsule of the joint is sutured laterally with a close running catgut suture which does not wound the endothelial lining of the capsule—a subendothelial stitch and the deep fascia and skin are likewise closed. In event of traumatism, which would produce a transudate equal to the venous stasis just spoken of, with a specific gravity of 1015, discretion would warrant carrying a drain out of the top of the bursal sac. Should the joint be infected, of course the drain would be necessary. The drain should be a dependent one, and in the two cases in question, it was carried higher up the limb and out of a buttonhole made through the fascia lata well toward its posterior border. This method of drainage has several things to recommend it:

First, with the elevation of the whole limb, eighteen inches at the foot, the drainage of the joint becomes dependent.

Second, with the flow of joint secretion all blood fibrin and cells and bacteria, are washed out of the joint through nature's efforts.

Third, the adhesions which will naturally be formed by the irritation set up by a rubber tube on a delicate membrane, will be found at a place where they can do no damage. They

cannot interfere with the mobility of the joint, and they will never be strong enough to restrict the motion of the tendon. At best these adhesions can only shorten the bursal sac. This is of no importance unless it must be used in subsequent operative procedure for a similar drainage. Silver wire in my hands has never acted as a foreign body when the drain was carried away from the wire. This gives nature an opportunity to encapsulate the wire.

Surgical drainage of the knee joint is not new. Barker, writing in the London Practitioner, February, 1910, uses Beer's hyperemis treatment early, and if that fails, he aspirates the effusion, makes a smear, and if bacteria are present, he opens and drains the joint. He fails to state his method of drainage. B. Riedel, Deutscher Medizinische Wokenschrift, Berlin, 1910, drains the knee infected with purulent arthritis, back of the condyle, or through the popliteal space. This is certainly a dependent method, but it may leave fibrin deposited between the articular surfaces, (Adami states that floating bodies in the joint are collections of fibrin from joint effusion), and it has the added danger of injury or thrombosis by extension of the inflammatory action to the great vessels. A neuritis might develop from a similar reaction.

The kind of bacterial activity does not alter the treatment. Gonorrhoeal infections should not be allowed to develop the deformity of a stiff leg any more than should any other organism. If a stiff leg must be had, it should be a straight leg.

In the mobilization of the knee, Klapp in Zentralblatt fur Chirurgia, August, xxxvi, 1143, mobilizes the knee by the interposition of soft parts after breaking up the ankylosis. In the first place, it is doubtful if ankylosis need exist, and if it does, the introduction of a lubricant such as deflocullated graphite, would more successfully ensure a mobile

joint than the eburnation of any animal membrane. It has the advantage that it can be re-introduced into the joint. Bismuth pastes have proven poisonous.

In conclusion I should say, that with dependent drainage, elevation is most important. It is the Fowler position of the leg. I never use extension for the same reason that I would not interpose an animal membrane between the articular surfaces. With extension, the relaxed joint is separated and fibrin is deposited between the articular surfaces, with a sure guarantee of ankylosis. The joint membrane is so constructed that it can bear the weight of the body without injury, and furthermore, it can bear the weight of the leg indefinitely, without becoming diseased through pressure.

In reviewing this simple treatment for an infected joint, I have two main objects in my method of treatment. First, the relief of the infected condition, and, second, the restoration of function. Under the first condition, the infection is relieved by rest on a splint, elevation of the foot, and dependent drainage as described. So far as I am able to observe, the joint is not exposed to air with drainage carried such a distance from the joint. Under the second condition, the patient is placed in the amblatory position with a posterior splint and allowed to walk, with the splint as protection against any unusual effort until all soreness has left the limb and joint, at which time, the splint can be laid aside.

AN OPERATIVE PLAN FOR THE CORRECTION OF CLUB FOOT.

JOSEPH GRAHAM, M.D., DURHAM.

In the normal foot every bone has a definite position and all the bones have a definite anatomical and mechanical relationship. These relationships are of the greatest importance, for upon them depends the balance of the skeleton of the foot and the freedom of motion of the various joints. In Clubfoot the bones are deformed, the anatomical relationships distorted and the mechanical balance thrown out of working order. Clubfoot cannot be corrected unless the shape of the deformed bones is corrected, and their anatomical and mechanical relationship be restored so as to bear weight naturally and so that the joints can move in a natural way.

The plan of correction is to correct the deformity of each and every bone of the foot by a series of subperiosteal osteotomies and restore the natural anatomical and mechanical relationships.

These osteotomies are very simple operations. The difficulty is the mechanical diagnosis. Study of the bone deformities by the X-rays is of very little value.

To properly plan and perform the necessary operations, we must be able to see and feel the foot when walking and to see and feel just how the weight is borne and how the motion of the joints is produced.

The plan of operative correction must be determined by (the surgeon's mechanical sense.) It is impossible to give in detail definite direction as to what operative procedures will correct the deformity in any case. The surgeon must determine what combination of operations will correct all the bone deformity. No matter what work is done for the muscular mechanism

the foot will not remain straight unless the bone deformities are corrected so that the skeleton of the foot is naturally balanced.

The object of our correction is to so balance the skeleton of the foot, that the muscular mechanism can be balanced and no braces or support need be worn.

Usually a series of two, three, four or more operations are required to fully correct all the deformity.

The plan is always to correct the varus first and the equinus later. In some cases it is only necessary to divide the metatarsals, excise a wedge from the cuneiform, divide the plantæ fascia and lengthen the tendo achilles.

In others it is necessary to divide the metatarsals, excise wedges from the cuneiform, Cuboid, astragalus, os calcis, tibia and fibula and also divide the plantax fascia, cut the great Clubfoot ligament and lengthen the tendo achilles. In the paralytic cases we also have to transfer tendons.

Each case must be treated according to the individual deformity. The object is to restore as accurately as possible the normal shape of each deformed bone. As various as are the shapes of the deformed bones, so various must be the size and shape of the wedges removed.

There is room for much judgment in determining where bone shall be removed and the size and shape of the piece to be excised.

Especial attention must be given the direction of the metatarsal angle, the size and direction of the cuboid and cuneiforms, the relationships of the scaphoid and astragalus. The position of the astragalus and its relationship is of the greatest importance.

In the performance of these operations we should always use curved skin incision and great care should be taken to place the skin incision away from the incision in either bone or tendon sheath.

Adhesions between the skin incision and the incision in bone or tendon will seriously interfere with motion. We never divide a tendon but always splice and suture it so that we can exactly determine what effect the lengthening or shortening will produce on the motion of the joint.

The osteotomies are performed by chisel and mallet with the foot resting on a sand pad. The effect of each bone division is tested by repeated palpation and manipulation. In this way we determine the necessary steps for full correction of the deformity.

Of course, it is needless to emphasize the importance of asepsis in the performance of these osteotomies. After the osteotomies are completed, the periosteum sutured, and the skin incision closed, a light gauze dressing is applied. Then the foot is molded into a natural shape, and a plaster dressing applied from the toes to the knee to retain the corrected foot in a natural position. We never put the foot up in an over corrected position. It is the natural position that we want to secure. During the application of the plaster dressing, great care is taken to hold the foot in a natural position so that all surfaces and arches are in a natural position.

After correction by subperiosteal osteotomies, if the work is properly planned the foot will remain corrected, in a natural position.

The plaster casts are removed in three weeks and passive motion and massage instituted.

Frequently considerable oedema follows these operations on the metatarsals but it always disappears under a few weeks' massage.

As soon as bony union has occurred in the divided bones the patient can begin exercising the feet and soon begins walking. If the work has been correct there will be no further need for plaster casts or braces.

We always take measurements of the feet and provide proper substantial shoes.

Frequently some little secondary operations are necessary to fully correct some little detail of bone deformity or impairment of motion. As the operative plan is to correct the bone deformity and restore the balance of the skeleton the same plan of procedure is used in congenital talipes, equino, varus and in Clubfoot, with marked bone deformity, following infantile paralysis.

In these cases of paralysis it may be necessary to transfer the tendons but the correction of the bone deformity must first be accomplished. It is useless to transfer tendons and expect normal motion where there is marked bone deformity blocking the motion of the joint. To restore these paralytic feet we must first correct all bone deformity, restore the normal anatomical and mechanical relationships, balance the skeleton of the foot so that it will bear weight naturally and that the joints can move naturally. Then the muscular system can be considered and the necessary work to balance the muscular system can be done. It is useless to attempt to balance the muscles until after the skeleton of the foot is balanced.

As our operative plan is to correct the bone deformity and restore the balance of the skeleton of the foot, we advise that it be used only in those cases in which it is indicated that is in cases of clubfoot with marked bone deformity.

In the cases of congenital clubfoot, seen early, and in cases of paralytic clubfoot in which the bone deformity is slight, we would not advise subperiosteal osteotomy. These cases can be corrected by manipulation, by manipulation under anaesthetic, followed by the application of retentive apparatus, and the use of suitable shoes and braces.

If the bone deformity is slight there is no need to operate upon the bones but our object will be to balance the muscular

mechanism by a series of teuotomies, shortening or lengthening of the tendons, division of contracted fascia and ligaments and in the paralytic cases, transference of tendons, followed by the use of massage and electricity.

In the untreated cases of talipes equino varus and in clubfoot, with marked bone deformity, following spinal paralysis we cannot correct the deformed foot unless we correct the deformity of each bone and restore the natural mechanical and anatomical relationship. In these cases the plan of operative correction proposed is the only means that will accomplish our object.

Of course it is impossible to make perfect feet from these deformities but it is really wonderful how much can be accomplished by these simple operations.

Our first cases were not well planned and the operations were repeated several times.

While our experience in the use of this operative plan is still very limited, as we are now more familiar with the mechanical and anatomical relationships of the bones and joints of the foot, we expect better results in future cases.

Our work on clubfeet has been very satisfactory. It is a real pleasure to correct these deformities so that the sufferers can discard crutches and braces and learn to walk in a natural way.

WHAT THE ROCKEFELLER SANITARY COMMISSION CAN DO TO BUILD UP COUNTY HEALTH WORK.

JOHN A. FERRELL, M. D., ASSISTANT SECRETARY TO STATE BOARD OF HEALTH FOR HOOKWORM DISEASE.

Gentlemen:—

What the Rockefeller Sanitary Commission can do to build up county health work is the subject assigned me by your program committee. The commission is vested with authority to use the donation of Mr. Rockefeller not to fight tuberculosis or typhoid fever, or to subsidise the salary of any health official doing general work; but the express purpose as the name of the commission implies, is "the eradication of hookworm disease." In so far as the eradication of hookworm disease in a county will build up county health work the Commission is free to act.

The Commission has been true to its trust, has devoted itself to fighting hookworm disease, for which purpose it was created, and has freely expressed itself, as has also Mr. Rockefeller, as highly gratified with the definite results thus far obtained, results of such magnitude that no other health work in the South or Nation—able authorities say—is comparable to it.

Yet John D. Rockefeller in restricting his gift to one disease and limiting the Commission he created to this one disease, was not forgetful of other diseases nor the strengthening of State and county health work. In a long and profitable experience with petroleum he had learned that the by-products of his industry rival in importance the refined oil; and that this principle applied to educational work for schools, farming, sanitation, etc., all of which in a democracy

are dependent on educating the people. His penetrating mind taught him and his corps of able advisors that the best, quickest and most efficient means of educating people along any line was by means of a practical demonstration.

In aiding county educational work in the South, either through the General Education Board or the Southern Education Board he spent money to secure the establishment here and there in this and other States of special tax schools as demonstrations. In these demonstration schools the people saw increased facilities, longer terms, better teachers and modern school houses replace what they regarded as all they could afford. As a result in this State there have been voted by the people, in spite of their usual aversion to increasing taxes, a special tax for schools in 1,275 districts within the past twelve years. Having increased the school funds of the State in this way more than $1,228,886.00 an amount more than one-third as large as the entire school fund of the State, he is now directing his attention to the accomplishment of other definite things in educational work, which we shall not here discuss more than to say that all his representatives are employed for their entire time.

What has he done for agriculture? Did he diffuse his assistance to all crops, or for a definite demonstration? You know the answer. Through the General Education Board he put up the money for the boys' corn clubs, a crop which can be made in every county in the South. Why did he not take wheat, cotton or tobacco? One crop only was needed and corn is a necessity and grows everywhere. The result has been, as you know, that the yield has increased by leaps and bounds until now 100 bushels of corn are grown to the acre by mere boys, a feat undreamed of ten years ago.

The money for the girls' tomato clubs is put up by Rockefeller. Why did he take tomatoes? Because it is a crop which grows without fail every season in every Southern State,

and affords the opportunity for the single demonstration, which is sufficient. The canning of other vegetables or the fruits will be taken care of by the people as soon as the care of one definite product is mastered. Another aid to the farmers he supports is suggested by the name; the Farm Demonstration Work. In this the farmer who desires it is instructed in the cultivation, not of the entire farm, but of a single acre, using new and effective methods. This demonstration is sufficient. The remainder of the farm does not suffer long. The results have been that since this work began the yield per acre of all the crops has been increased from two to ten fold.

Those of you familiar with the campaign of tick eradication know that its splendid success has been dependent on the demonstrations made in small areas usually the county. Similarly $5,000.00 spent in making a demonstration of two or three miles of good road does more to secure a bond issue of $250,000.00 for good roads by a county than would four times the amount paid in a haphazard manner on 100 miles of road. The demonstration which is practical and gives definite measureable results in the brief time the average man is willing to wait is the key to educational work.

Having seen this principle repeatedly found true in the educational work he supported what might be expected of Mr. Rockefeller when he concluded to lend support to health work which we all acknowledge is based on educating the people? His first notable health work was in the establishment of the Rockefeller Institute for Medical Research. What has been done there under the direction of Flexher is well known to you all. His next aid to health work was of a more practical nature so far as you health officers are concerned. He set about to select a disease which afforded the best opportunity for the eternal demonstration. Look through the list of diseases found in the State or South for example.

What is available for the purpose? Diphtheria responds splendidly to modern treatment, but is epidemic and requires immediate action. A few men in a large territory like a State could not meet the emergency of an epidemic and once the epidemic was over months might elapse before they could work again. Malaria is preventable and curable and would afford a splendid disease for demonstration purposes, but it is prevalent only at certain seasons of the year and in certain sections. Unlike malaria typhoid fever has no specific remedy and is not adapted to demonstrative purposes. It may be prevented but the people often will not credit statements that is has been prevented. Tuberculosis is prevalent and so chronic that for twelve months of the year it may be found in every county in the State. Hence it would afford an excellent example for demonstrating health work if immediate and striking results could be obtained in the short time the restless American is willing to watch for it.

Hookworm disease has none of these disadvantages. It is the most prevalent disease we have and is found in every county of the State. Its chronic nature renders it available for demonstrative purposes every day of the year in every community of the State. It is the only one of the common diseases in the State which has a causative agent discernable to the naked eye. It is both preventable and curable by methods, the simplicity of which appeals to everyone. The results following treatment are so prompt and emphatic that they have been aptly compared with the miracles of the New Testament.

In 100 counties of the State physicians have already seen the happy responses to treatment for hookworm disease They were, however, hedged in by medical ethics so that their experience was not heralded to the community at large. Without these restrictions they could have increased the interest of the people generally in preventive medicine. In this

particular a whole-time health officer would be free from such considerations. He would not be regarded as courting private practice when he went about teaching the people.

Since last July five whole-time health officers have conducted in thirty-five counties State and County Dispensaries for the free examination and treatment for hookworm disease. Forty thousand people have been treated in this way. In every nook and corner of these counties may be found walking and talking examples to enthusiastically and eternally demonstrate the wonderful transformation which can be brought about with a small sum of money. The amount of work done by each man devoting his entire time to it is demonstrated. In being paid a salary he is not seeking fees in competition to practicing physicians. He can therefore have the co-operation of the profession and not, as is often the case, its hostility. Sums of from $200 to upwards of $300 have been appropriated in twelve months by the Boards of County Commissioners of forty-one counties, a total of $9,-450.00. Forty-one counties have paid for an average of six weeks' definite health work more money than is paid in salaries to the county superintendents of health in seventy-five of all the counties in the State. This demonstrates that county money for health work is available as soon as the taxpayers are convinced by demonstration that you have something for them worth the money. Money is not scarce for those propositions which insure handsome returns. Robeson County had the dispensary demonstration last July and August. It saw the results in six weeks of 2,000 people treated for hookworm disease. Now it has our demonstrator as a whole-time health officer at a larger salary than the Commission was paying him. With the approval of the profession of the county he will continue for the greater part of the summer at the county's expense to make demonstrations by curing hookworm disease.

Sampson County had this demonstration work at the same time. Its people there saw 2,300 people treated for hookworm disease. Dr. G. M. Cooper, County Superintendent of Health, has since written that, "The dispensaries for treating hookworm disease did incalculable good to our county from every standpoint. To the infected children the actual treatment given has been worth many times the cost; but I believe that even greater good has been accomplished in arousing the people to a sense of the need for better sanitation and hygiene in everyday matters. Not a single complaint even among the most miserly has been heard." Hear what Mr. C. D. Bradham, chairman of Craven County Board of Commissioners, writes as a representative of the feeling of County Commissioners: "I will be glad to make a trip to ———— county at my own expense and appear before their board for the benefit which this entire section would derive from the service. We are just beginning to realize how much good it has done Craven County. No equal amount of money we have spent has meant more for the welfare of the county." Mr. Joe Brown, of Chadbourn, states that he has sold considerable lumber in his county for sanitary privies. A Goldsboro merchant said that the sale of strap hinges and screen wire for privies has been a boon to his business. Evidences that the demonstrators are educating the people come in from all sides.

These gentlemen who are to discuss this subject will, I feel sure, make clearer to you than I have been able to do the invaluable impulse county health work is receiving from having a concrete demonstration in a practical and convincing manner with disease particularly suited to the purposes of demonstration. If they have not actually seen the dispensary work there are numerous health officers present who have actually seen the work in progress and the results following it. I feel sure they, too, would be glad to give

you first hand information concerning the educational value of the dispensary.

In doing this demonstrative work with a disease the Rockefeller Sanitary Commission is doing, I believe, for State and county health work what the corn clubs and farm demonstration work has done for agriculture, and what the General Education Board has done for school work, namely, giving definite demonstrations.

METHODS AND IDEALS IN STATE MEDICINE.

W. S. RANKIN, CHAIRMAN SECTION ON STATE MEDICINE OF THE NORTH CAROLINA MEDICAL SOCIETY AND SECRETARY NORTH CAROLINA STATE BOARD OF HEALTH, RALEIGH.

The happy girl of sixteen, in her exuberant health, accepts her greatest blessing as a natural inheritance, as natural as the sunshine, and gives it as little thought. Her attitude to health is one of indifference. Time passes and girlhood fades into motherhood; death knocks at her door; her baby answers the summons; blinded with the bitter tears of sorrow, she falls on Providence. Her attitude to health is one of fatalism. Time moves on, and observation, sharpened with the friction of the years, discerns relationship between pre-existing and subsequent disease, between environment and disease, and slowly there is evolved a consciousness of control over disease producing factors. Health fatalism recedes as the light of the most powerful fact of the nineteenth century—the preventability of diseases—enters her mind; the spirit of the dead baby calls her attention to the terrible meaning of needless death, awakens her conscience to its part in the great conflict of life and death, and a raw recruit enters the army of health workers. Her eagerness to do something will not permit of the development of mature plans; the desire to serve overbalances ability to serve; public health is more philosophy than science. Her attitude to health is one of uncoordinated enthusiasm, characterized by spasmodic and sporadic efforts to prevent disease. Finally, with the novelty of the new idea worn off, with the sedative effect of the fatigue of sporadic exaggerated effort, cold reason resumes her throne, and puts the blunt question: Where are the fruits of your labor? Exactly what to do you seek? What

evidence is there to indicate the value or futility of your effort, The health enthusiast begins to think, to seek some fixed point from which progress may be measured, and vital statistics as an absolute necessity in health work is recognized. With that discovery philosophy gives way to science, and exuberant enthusiasm to steady, rational effort. The attitude to health is rational, scientific.

These various mental attitudes to health—the indifferent, the fatalistic, the enthusiastic and the rational or scientific—are found in varying proportion in the public opinion of different places, and so is the attitude of the local government to health work indifferent, fatalistic, enthusiastic or scientific and rational.

The indifferent and fatalistic types of mind are passing rapidly into extinction. God speed them.

The enthusiastic type of mind is still rare enough to be appreciated when found. This type makes a good supporter but a bad councilor for the health officer. People of this type are visionary; they have schemes for cleaning up the town or county in less time than it takes to bathe a baby; they regard a board of aldermen or commissioners as an absolute and not as a representative power; they waste valuable energy in vain endeavor to scale the heights, rather than take the more circuitous path of popular education that will surely in the end bring them in sight of the promised land; they appraise a health officer by the amount of appropriation that he is instrumental in securing, by the number of speeches he makes, and by the amount of literature he scatters, some by the wayside, some upon the stony ground, and, thank God, some upon good soil.

The scientific attitude to public health recognizes society in its entirety and not as unrelated fragments, not as so many thousand or million individuals, but as Herbert Spencer saw it, as a unity, a "social organism." To the scientific mind

the individual is to the social organism what the cell is to the cellular organism; the industrial or social class to the social organism, what the organs or groups of cells of like function are to the cellular organism. In the one as in the other, units and classes or organs are mutually dependent and bound into a co-ordinated potentiality.

This social organism, the body politic, may become diseased just as the cellular organism, and like it exhibit disease phenomena or symptoms. These disease phenomena or symptoms are as essential in the diagnosis and treatment of diseases of the social organism as they are necessary to the proper diagnosis and treatment of diseases of the cellular organism.

As a system in the cellular organism is the expression not of one but of many cells, so symptoms of disease of the social organism are civic rather than individual expressions. These symptoms are in terms of *per* thousand or *per* hundred thousand population—in short, in the very nature of the case they must be statistical. Inasmuch as they relate to conditions of life they are properly called vital statistics.

Our analogy continues: As the symptoms of the individual disease may not be sufficient in a single day's duration or even in several days' or weeks' duration to make a conclusive diagnosis, so vital statistical returns, the physiological or pathological phenomena of the social organism may not be sufficiently marked or definite for some months or even several years, to justify conclusive opinions relative to the nature of the disease affecting the body politic. In short, there are tedious and difficult diagnoses in both classes of diseases—of the cellular organism and the social organism.

Vital Statistics or the Symptomatology of Diseases of the Social Organism.

A symptom may be defined as a departure from the average vital phenomena. As in medicine a study of the normal must

necessarily precede ability to recognize the abnormal, so in health work, if one would recognize disease in the social organism, the body politic, he must be familiar with the average vital phenomena of that organism, that is, the composite life conditions of millions of people as indicated in vital statistics—he must know the normal to recognize the abnormal.

But the place to study symptoms is in the clinic. Let me introduce patient Z.

Age: Classifying hamlets as municipal infants, villages as municipal children, towns as municipal youth, and cities as municipal adults, we find our patient in the young adult class.

Weight: 20,000 population.

Size: In due proportion to weight.

Hereditary History: Best blood on earth; no heredity taint to suggest present symptoms.

Past History: A considerable amount of carelessness about health in the past as indicated by absence of any record as to past sanitary conditions.

Present Symptoms, are shown on charts Nos. 1, 2, 3.

PATIENT Z; CHART I.

CHART DEMONSTRATING UNENFORCED LAW REQUIRING REPORTING OF CERTAIN DISEASES.

Disease	Cases Reported	Deaths	Actual Fatality	Average Fatality
Tuberculosis	27	54	200%	10-25%
Typhoid Fever	48	11	23%	10%
Whooping Cough	13	10	76.9%	10%
Measles	31	5	16%	5%
Diphtheria	28	4	14%	8%

PATIENT Z; CHART II.

DEATH RATES.

Death Rates	In Z.	In average City of the United States.
General	27.6	15
White (South)	25	16.5
Colored (South)	40	26.2
Tuberculosis	270	160.3
Typhoid Fever	55	23.5
Diarrhoeas under 2 years	215	100.8
Whooping Cough . . .	50	11.4
Measles	25	12.3
Scarlet Fever	0	11.6
Diphtheria	20	21.4

PATIENT Z: CHART III.

TOTAL DEATHS.

Causes	Occurring	Would Occur With Average Death	Excessive
All Causes	508	300	208
White Population . .	326	214 (South)	112
Colored Population .	280	183 (South)	97
Tuberculosis	54	32	22
Typhoid Fever	11	5	6
Diarrhoeas Under 2 years	43	20	23
Whooping Cough . .	10	2	8
Measles	5	2	3
Diphtheria	4	4	
Scarlet Fever	0	2 credit of 2 lives	

Chart No. 1 should be considered first because it is introductory to and partially explanatory of the others. This chart shows such disproportion between reported cases and deaths of reportable diseases as to prove one of two most hurtful conditions: Either a medical profession that carelessly or wilfully neglects to comply with a law which all medical societies hold to be the most fundamental of all health laws,

namely, the law requiring the reporting of certain diseases, or a medical profession that cannot treat the diseases indicated with as low a fatality as the average profession. I challenge any man to place any other interpretation upon the facts of Chart 1. When a law of such vital importance as that requiring the reporting of communicable diseases is ignored by the medical profession of a community, what health laws, pray tell me, shall the health officer expect the average citizen to respect?

Charts 2 and 3 show the death rates and deaths in absolute figures respectively that would occur with the average standard health conditions and that did occur under the conditions that actually obtained with Patient Z. With such facts as the charts present it requires less brains than backbone to say that Z is sick, bad sick.

Proceeding logically, our next question would be, what particular type of disease is Z suffering from?

In the first place it is most important that we distinguish between the two great groups of diseases that affect the health of the social organism. The first group is the noncommunicable, affecting the *individual* as a punishment for his own sins against the laws of nature, not subject at present to governmental action, but subject only to the forces of self-control—a class of diseases to be hereinafter referred to as personal diseases. The second group are communicable, affecting the *citizen,* brought on him by bad sanitary environment or associates, over which in many cases the sufferer has no control, forces subject only to the civic and not the individual will, a class of diseases readily amenable to sanitary government—a class that will hereinafter be referred to as public or civic diseases.

Returning to our patient, the next question in logical order is, from which of the two great types of disease is Z suffering? See Chart 4:

CHART No. IV.

INDIVIDUAL AND CIVIC OR PUBLIC DISEASES.

from

INDIVIDUAL AND CIVIC OR PUBLIC DISEASES.

	Personal or Individual Diseases	Civic or Public Diseases	General Death Rate
United States Standard	316	489	15
T	260	1000	17
U	240	750	18
V	230	710	20
W	220	500	14.5
X	570	1110	25.9
Y	290	510	18
Z	610	880	27.6

There is about the same relative increase in the personal or individual disease death rate as in the civic or public disease death rate of Z, therefore, Z has a complication of both of the main types of disease. This is a symptom of profound prognostic significance. For as the civic or public diseases yield to preventive medicine readily, and the individual slowly, if at all, people have a right to expect a much greater reduction in the death rate of a town where the major part of a high general health rate is due to the civic or public diseases instead of the individual diseases. For example, we should expect more of the health officer of X than of the health officer of Z; more of the health officer of U than of the health officer of Y.

Scientific diagnosis proceeds from general to specific conclusions. We have found Z sick; we find that Z has both the individual and civic classes of disease. We have seen that in a general way, for the present at least, the individual diseases constitute an incurable, and the civic a curable class of diseases. Surely then the health officer in attendance should address himself to that phase of Z's pathology which will most

greatly and as completely as possible give relief, namely, the preventable diseases from which Z is suffering. In doing so he should bear in mind that the preventable diseases are the infectious diseases, and, therefore, before proceeding further it may be well for him to inquire whether Z has a simple or a mixed infection. The answer to this question should influence the treatment. There are recognized in public health work today four principal types of infection: Air infections, characterized by excess death rates in tuberculosis, and possibly pneumonia; sewage infections, characterized by high death rates in typhoid fever, and diarrhoeas of infants; contagion infections, characterized by high death rates from whooping cough, measles, scarlet fever, and diphtheria, and stagnant water infections, characterized by high malarial death rates.

An examination of Charts 2 and 3 shows that the first three types of disease, the air, the sewage and contagion infections, are increased in about the same proportion, or, in other words, that Z has a mixed infection. In contrast to the mixed infection of Z observe the infection of S, where the high death rate from sewage infection dominates the symptomatology:

PATIENT S.

Death Rates per 100,000	Patient S.	Average in United States.
General Death Rates (Both Races)	14.5	15
Tuberculosis	160.0	160.3
Typhoid Fever	53.0	22
Diarrhoeas (under 2 years)	150.0	100.8
Whooping Cough	23	11.4
Measles	0	12.3
Scarlet Fever	3.0	11.6
Diphtheria	10.0	21.4

Finally, after observing that the body politic is sick, after noting to which of the two great types of disease the sickness belongs, after recognizing the kind of infection, mixed or simple, we should note whether the infection is localized or

generalized, that is, whether all classes are equally or unequally involved. See Z, Chart 2, for a generalized infection involving the two races about equally; see Patient Q, Chart 1, for infection confined to the negro population:

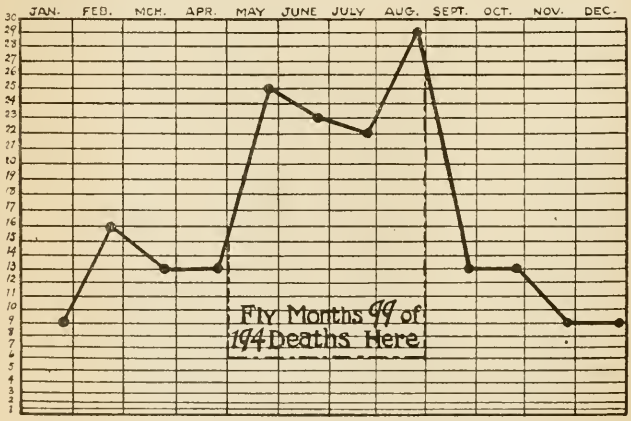
PATIENT Q; CHART I.

Death Rate.	In Q.	In average City in United States.
General	22.8	16
White	16	16
Colored	37	26.2
Tuberculosis	329	167.5
Typhoid Fever . .	211	22
Diarrhoeas (under 2 years)	282	91.5
Whooping Cough . .	82	10.1
Measles	35	10
Scarlet Fever	11.7	11.9
Diphtheria	47	21.2

The white death rate is normal, and the excess death rate, the sickness of the social organism, is made up entirely of negro deaths.

Q, Chart 2, shows that of the total of 194 deaths, 99 occurred in the four months of May, June, July and August:

PATIENT Q, CHART II.



Now take the syndrome here presented: First, excess deaths among negroes, a class living in unsewered districts with abundance of open closets about them; second, excess deaths occurred in May, June, July and August, the fly months; and third, excess deaths from sewage infection, *i.e.*, typhoid and summer diarrhoeas of children, and the conclusion as to the etiology—flies and open privies—of Q's diseases is unavoidable.

The doctor who recognizes only the *common* characteristics of a disease and overlooks the *peculiarities* contributed by certain individual factors, and who treats disease by rule of thumb methods, and ignores individual modifying factors, is not to be classed as a first-rate scientific physician. Likewise, the sanatarian who gives the general tonic treatment of sanitary education to every sick town or county, and fails to meet the *special* indications in each particular town or county, falls far short of his opportunities as a health officer.

I repeat for emphasis, there is a symptomatology of disease of the social organism; it is as necessary in the intelligent treatment of diseases of the social organism as is a knowledge of the meaning of symptoms in the treatment of diseases of the cellular organism. My endeavor in this paper, so far has been to call your attention to just enough of this symptomatology to show its existence and suggest its inestimable value. It is admitted that the symptomatology of diseases of the body politic is not a perfect science yet. As the symptomatology of personal disease was relatively simple and undeveloped fifty years ago as compared with the present, so will develop the symptomatology of public disease in the near future. But even now, the fact should be recognized that a health administration that pursues its course without a close study of symptoms, of vital statistics, is unscientifically pursuing its way without compass or chart on the ocean of life, blindly working in the dark, and may find some day, when the

light of truth breaks through the clouds of ignorance, that all its building has been on the shifting sand of opinion, and not upon the rock of eternal fact. My first point then is, that scientific health work must rest on a basis of vital statistics and that such statistics are in their meaning analogous to the symptoms of personal disease.

Another value of vital statistics, second only to their value in the intelligent treatment of disease of the social organism, is their influence in removing public health work from politics. Once the people have grasped firmly the fact that a health officer is one who reduces death rates or increases average longevity, the health work of this country will be established upon a basis of genuine merit and not upon popular whim or political favor. A government that re-elects, elects, or maintains any person who has not or does not show the effects of his work in a definite saving to human life and health will never be tolerated. The health officer who can deliver the goods, pardon the slang for its expressiveness, will be in demand, can command his own salary, and even better than that, deserve it. When that good time comes the best minds in medicine will be shifted from curative to preventive medicine, the newest specialty will be the greatest specialty, the specialty that pays best and affords the greatest opportunities for glorious achievement—public health will have come into its own.

In conclusion, the only method of health work that will ever be effective must rest upon a system of facts furnished by vital statistics.

The ideal in the public health work of this State for which we incessantly long is a State-wide enforcable vital statistics law, that, with the powerful pressure of public opinion and that primal instinct, self-preservation, will make it impossible for the State itself to ever become afflicted, for any length of time, with a public health administration that cannot justify

its existence in a decrease in the State's death rate—the absolute test of efficiency in health administration; that will make every one of the one hundred county health officers of this State competitors in a great life-saving contest with the other ninety-nine; that will for ever divorce publice health work from politics; that will give the health officer the exact recognition, rating, and compensation that he merits as indicated by the death rate of his constituency; that will make public health work as attractive to strong men as it is needed by a grievously and needlessly sick social organism; that in the course of a few years will change the death rate in North Carolina from 18.5 per thousand to 12 or 13 per thousand, which means the saving of ten thousand lives a year with the concomitant amount of sickness, suffering and anxiety that goes with so great a loss of life; an ideal that will at least suggest that ecstatic vision wherein the old ideals and old order of things have passed away, and, in their place, a new heaven and a new earth adorned as a bride for her husband.

THE RESPONSIBILITY OF THE COUNTY MEDICAL SOCIETY TO COUNTY PUBLIC HEALTH.

Dr. A. Bascum Croom, Lumberton.

Responsibility confronts every man to a certain extent and can only be met in two ways—it can either be performed or discharged with fidelity, or it can be shirked.

A brave man does not dread and will not run from responsibility, but will rather welcome it, while a coward does everything in his power to avoid it.

A man who lives a life worth while is a man of responsibility A man who refuses to recognize responsibilities lives his life, passes off the stage of existence and the world is not aware of his having appeared thereon. Surely no man will deliberately choose to pass through the world without some impression or evidence left of his existence.

The special responsibility of the County Medical Society is clearly evident, I think, when we remember that it represents practically every doctor in the county, and it is to them that the public looks for information regarding matters of health and disease. Almost invariably the people are satisfied with our opinions in these things and if all the doctors in a community are agreed upon the points pertaining to public health, it is a certainty that the public will act upon their suggestions.

I fear that we are somewhat inclined to criticise public officials for doing so little along these lines, and especially do we say they are stingy with funds and that we are, therefore, seriously handicapped in all our efforts for preventing disease or stamping out an epidemic. We rather like to speak of the liberal appropriations and large expenditures for the benefit of the hog, the cow or horse and the salaries of sheriffs, etc.,

for dealing with the criminals, while little or no attention is paid to the health conditions of the human being.

My contention, set forth in these few remarks, is that it is our fault that such conditions exist, and that at the feet of the medical men of our State and country at large lie these responsibilities.

Comparatively few of our counties have a real Health Officer—and why? We have been trying to argue both to ourselves and others that it is due to the fact that the funds are not available, and that our Boards of County Commissioners will not appropriate them; but I tell you, gentlemen, it is because we have not made the proper presentation of the matters to them that they have withheld from us the necessary funds.

In my county it has surprised me that there was so little opposition to the movement inaugurated by our County Medical Society and that after the county officers had taken a favorable action how well pleased the people were. We had a full and enthusiastic meeting of the society at the same time and place with the County Board of Health and Commissioners—the newly-elected president read his "annual adresss," setting forth the fact that the coming year would be one devoted to the prosecution of public health questions, and that the first step necessary was to employ a competent Health Officer for his entire time. A joint meeting with these boards was arranged for later in the day and to them we read resolutions adopted by the county society, and appealed to them to help us in the fight. It was shown, by conservative estimates and statistics, that the sickness, disease and death of the county were costing annually more than twenty dollars per capita, while our expenditures for preventing disease and preserving health were less than one cent per capita.

We recommended that a competent man be employed for his full time, that the county society be allowed to nominate the

man and to fix his salary. The men composing these boards were men of judgment and business ability, and without a single exception or the least hesitation said, "You doctors know what we need in this line—go ahead and do it—we are with you." We made a selection and had our man put in at a salary of $2,500.00. Later it was found necessary to make some publicity of the facts to save criticism of the board, who were charged with an extravagant administration. But this was easily overcome and so far as I can observe our people are now thoroughly satisfied and I do not believe that they would allow the office abolished.

To accomplish this in every county in our State it is, in my opinion, only necessary that the County Medical Societies go to work along these lines and it can be done. The responsibility is upon us and we cannot afford to lay it aside.

Let me urge that every county in North Carolina employ a good man for his entire time for the duties of Health Officer and, having done this, that every physician in that county shall give to him his best energies in the prosecution of his work, and his most loyal support in bringing about the much-needed reform in life and health preservation.

THE MEDICAL PROFESSION'S RESPONSIBILITY FOR THE USE OF PROPRIETARY AND PATENT MEDICINES.

Dr. L. N. Glenn, Gastonia.

A thorough discussion of the above subject would be entirely too lengthy for this time and place, and I shall necessarily abridge my paper by attempting to present only such phases as to my mind appear most salient.

Let us exclude from this paper such agents as are recognized as ethical and of genuine merit—manufactured by honorable houses and unquestioned by the best of the profession, remembering at the same time that our neighbor, Somnos, is exploited by one of these same houses.

Let us consider first Proprietary and Patent Medicines—Character and Extent.

Within the space of only a few short years, we find the number of these nostrums to have greatly multiplied. Each has its introduction to the laity via the sample route—rejoices in its zenith, wanes from its popularity, and after a few days of grace, bows a reluctant farewell, while its promoters have but to either re-label it and introduce it again, or introduce a new one. We have seen them run their course and disappear—others are now in their glory while the future only remains to supply still others to our children and our children's children. We are not exaggerating when we say they are exploited everywhere. Our cities, towns and villages are constantly being deluged with samples while our rural districts through the mails are likewise treated to a liberal supply of the same. Almost every conceivable ill that the human family is heir to has its particular panacea, lauded in unstinted terms, while every known drug and many things

which cannot be recognized as drugs have their specific field of usefulness and according to the irresponsible vendor who exploits them, that field of usefulness is only limited by the confines of the universe. Solutions, mixtures, emulsions, powders, capsules, pills, ointments, poultices, lotions, etc., each meekly bows to its part in the shame.

Most of them contain a little syrup, a little sugar of milk, a little coloring matter, very little real medicine of intrinsic worth and the ever present alcohol or dope which only lulls the poor ignorant, gullible victim into a state of false relief and paves the way for a willful indulgence.

Responsibility Incumbent. Is it or is it not?

Someone might dissent and claim that "A man is a man for a' that and a' that," and that it is his own privilege to do as he pleases.

For ages and ages the world has gone to the legel devotees for opinions on legal matters—to Bible students and the clergy for facts bearing on religion—to farmers for knowledge as to farming, and thus have set up by common act, custom and consent the common law that our contention, that we are responsible, is correct, in that we are the ones to whom the world looks for opinions on health and medical matters. Practically every civilized country on the globe has in one way or another recognized and licensed physicians.

Discharge of Responsibility—Teaching.

We may approach this subject from every conceivable angle and yet cannot avoid the conclusion that the discharge of our responsibility lies in teaching, in enlightening the laity, cultivating and crystalizing public sentiment and especially that of the youth of our country and in bringing them to an actual realization of the dangers incident to the use of these nostrums.

First of all let us look to the doctor himself. Before he attempts to fill the important position in society to which his

chosen profession has assigned him, he must necessarily be competent. Our State Boards of Medical Examiners are most wisely endeavoring to admit to our profession not only men possessed of medical knowledge but men who have that associated with genuine honor and true manhood. Let us hope that the profession will be saved from the company of the doctor who buys stock in the John's Pill Company, and then proceeds to prescribe John's pills sold at so much per, while he pleasantly awaits his dividend check from the concern. How about the man who would thus commercialize the confidence reposed in him by a patient, and yet we have them in North Carolina.

He must have carefully surveyed the field that he is to care for and thoroughly fitted himself for its care. The physician who is so ignorant that he has to, or is so lazy that he prefers to re-label a package of patent medicine and pass it on to his hapless patient is manifestly unworthy to belong to the honorable profession which he is so grossly dishonoring.

Likewise the physician who permits the sorry fellow who has failed to succeed in the profession of medicine either from ignorance, dope, whiskey, laziness or what not, and who has gone on the road to glibly extol to him the impossible virtue of his special nostrums is even more culpable. It is an outrageous insult to the honest physician who aspires to live up to the requirements of his noble calling to have these sorry, unscrupulous, designing representatives tell and advise him what to prescribe, pollute his office with their so-called elegant preparations and attempt to financially fatten at the expense of the poor victimized patient whose innocent stomach would be made a cesspool for these elegant samples. He gratuitously tells you what you think and what he knows, when as a matter of fact neither of you know the contents of these packages. He would have you consider him an evangel

who had by some very special act of Providence fortunately passed by your way to enlighten you. This is more especially true in the case of the young doctor who is just beginning his career. He is considered an easy mark and is given especial attention by these same benefactors. We usually find at our annual meetings that the local committee of arrangements has been most graciously assisted by these fellows in that the nooks and corners, or corridors of the buildings are elaborately decorated with their various samples. Thanks to our Hendersonville brethren, who have so nicely taken care of us, without their assistance.

Who of us know the contents of these packages, put up expressly for the coin by men of whose character and of whose knowledge of medicine we know absolutely nothing, and whose identity is even not always known.

This leads us to consider what we must prescribe and through whom. Study closely the pathological condition to be dealt with. Study closely the elementary drugs known to the profession, then prescribe as near as possible the right drug, having a specific and definite reason for so doing. Do this and expect results.

Here we may admit to our armamentarium such things as are of true known value. Dover's Powder, paregoric, and many other combinations of drugs were once proprietary but their constituents are well-known drugs of unquestioned worth, and we make no criticism of their use.

The proprietary and patent medicine man insists that we haven't capable druggists to compound our elementary drugs, hence the necessity for him, but who vouches for him. Only too often is it true that our so-called druggists are very incompetent, but certain it is, that to some extent, the fault is ours, in that we do not require them, so long as we are content to let the vendors supply our nostrums ready-made and require nothing of the druggist.

We doctors slave along day and night for some drug store and are peacefully submissive while the fake druggist supplies and persuades our patients to buy his ready-made junk rather than let them be scientifically examined and intelligently prescribed for by reputable physicians upon whom the very life of store depends. Pardon the slang, but "that's gratitude."

Let us as devotees of one of the noblest callings, teach the laity more about the laws of health. Instill into them better ideas of sanitation, hygiene, ventilation, light, heat, diet, sleep, exercise and systematic living. Teach them something of the intrinsic merit both of good and bad medicines, and enable them to think intelligently of drugs and health matters in general. Then whenever we reach the time when we have an enlightened clientele along the line of health matters, their own capable judgment will steer them free from the multitudinous nostrums which disgrace our profession today. You will frequently find the parents of a family perfectly satisfied with the application of Gowan's Pneumonia Cure to a sore toe, or the old man taking Wine of Cardui for rheumatism, and will be unable to institute proper treatment. But if you will enlighten their ten or twelve years old children concerning these ignorant absurdities, you may confidently hope for a better future. Teach your patient the fallacies associated with medical matters, the inconsistencies, the indications and contra-indications for prescribing and think how very seldom you are justified in withholding facts concerning his condition from him. Enlighten him to the extent that he will call on you for more enlightenment and thus eradicate the ignorance which prompts him to seek the ever-present nostrum with its endless detrimental effects.

If we be worthy successors to the pioneers of medicine in our land, we will never acquiesce with the continued ignorant demand of the laity for all sorts of quackery, but will bestir

ourselves, live up to our opportunities, meet our obligations to our fellowman, both of the laity and of the profession, and after having been teachers as well as doctors, look the fake medicines squarely in the face with a consciousness of duty well performed and enjoy the sweet consolation of having faithfully discharged "The Medical Profession's Responsibility for the Use of Proprietary and Patent Medicines."

THREE DECADES IN MEDICINE, A RETROSPECT, A PROPHECY.

Dr. J. C. Walton, Richmond, Va.

June 19, 1912.

In the springtime of 1879 two verdant young country medicos might have been seen wending their sad journey to Greensboro to undergo that terrible ordeal, an examination before the State Board of Medical Examiners. The writer will never forget what fear and trembling possessed his soul when first confronting that august body and his unbounded joy and enthusiasm when told that he had passed.

My friend in misery was Dr. Charles E. Bradsher, of Person County, N. C., who later became the leading physician in that section of his State and but for an early death from the great white plague might easily have adorned and graced any position in this honorable body.

Dr. Bradsher was a born physician and the most resourceful one that I have ever known. I recall on one occasion when called to relieve a small boy suffering from retention, the doctor not having a catheter and the case being very urgent, he improvised an intrument from a feather and saved the day. On another occasion when called to see a man who was seriously hurt in a drunken brawl he found a fractured skull and a bad fracture and dislocation of one of the extremities, after raising the depressed bone the patient became conscious and then attempting to relieve the limb the man became so unmanageable that the good doctor depressed the bone on his skull and he became quiet and unconscious, and after dressing the limb the doctor again lifted the fragment off the skull, the man became conscious and made an uneventful recovery. You can readily perceive that no anaesthetic was available and the

doctor's ingenuity had to meet the issue. In other words, the man and the occasion met.

From the above you will readily see that the life of the country doctor tends to develop the qualities of resouceful-ness and of self-reliance. I know of no better training school for the recent graduate in medicine than five or ten years of country work. It will make a good physician of him, if anything will.

After securing our licenses we were so elated that my friend Bradsher thought that the next thing in order was to have some visiting cards struck off with the honorable distinction thereon: "Member of the State Medical Society," as we were the pioneer Board Tacklers from the respective counties of Person and Caswell, we did not like to hide our light under a bushel, but after a little reflection and time to allow our enthusiasm to cool we reluctantly decided to forego this honor, lest it might be thought by our friends to savor of charlatanism.

Prominent among the workers and leaders of the society I recall with much pleasure Wood, Lewis, Thomas, O'Hagan, Satchwell, Edmund, William Strudwick, the elder Payne and Whitehead, Cobb, Bahnson, Duffy, Carr, and many others too numerous to mention, including P. L. Murphy, who though called away in the prime of life left his impress upon the times and was regarded as the foremost Southern alienist.

These noble men not only labored unceasingly, giving freely of their time and talents and devoting their lives to making the North Carolina State Medical Society, the State Board of Health and the State Board of Medical Examiners standards of the highest reputation and excellence, but they have been the pioneers in their respective fields and are justly regarded by the respective boards of other States as models for them to follow. This Society should ever revere and cherish in grateful remembrance the memories of these men and their

names should never be forgotten so long as fame her records keeps.

In the olden days the medicos were not afflicted with the surgery craze but they were taught the most important and useful branches. The ones they would need most in their daily work, viz.: practice of medicine, obstetrics, materia medica, therapeutics, and physical diagnosis as in those days the doctor was required to diagnose and to treat his own patients secundem artem, otherwise he would soon find himself in the position of a doctor without a patient.

Per contra—In these modern, up-to-date times every medico is a born surgeon. The good old branches are obsolete and the old family doctor has become a tradition in this age of specialism and agnosticism.

It is considered by many to be an indication of culture to be an unbeliever, a scoffer and a doubter—even the good old family Bible is losing caste and is being relegated from its seat of honor on the center table in our parlors—to the garret.

Should God's last and best gift to man become ill, she visits a specialist, an internal medicine man, who probably has had good laboratory facilities, but lacks clinical experience and the saving grace of common sense. This gentleman in order to sufficiently impress her of his great and transcendental importance takes down a long clinical history and she gets a gastric, urinary, fecal and blood ex. et al., etc.

For her headaches she is referred to an opthalmologist, gets a mydriatic and is told to use glasses. For the pain in her abdomen she is sent to the omniscient and omnipotent surgeon who finds that she has appendicitis and that her gall bladder needs draining. Possibly her uterus is slightly displaced, for which she needs a ventral fixation, curettage, etc. After emerging from all this, a shadow in body and mind, the neurologist gets her and she continues the downward route

and like the woman mentioned in the Scriptures, suffered much at the hands of many physicians.

Her resources being about exhausted, and likewise having exhausted scientific medicine, like a drowning person she catches at a straw and seeks solace in Christian Science when she is comforted with the good news that there is no such thing as sickness, disease or death.

Gentlemen, are we wholly to blame for this unfortunate state of affairs? If we would cling closely to the ideals of the fathers and always consider the interest of the patient paramount, there undoubtedly would be less of quackery and charlatanism.

Now don't misunderstand me as inveighing against diagnosis, for diagnosis and pathology are more than half of medicine and we cannot be too careful and conscientious in our work; but for Heaven's sake avoid grandstand play simply to impress and bleed your patient. "To thine own self be true and it must follow as the night the day thou can'st not then be false to any man."

In a recent address at Atlantic City Woodrow Wilson deplored the extreme tendencies of our times towards too much specialism in medicine, citing an instance in his own family where thirteen doctors were called in his family during one year, yet, wonderful to relate, the patients finally pulled through. The eccentric John Randolph, of Roanoke, during his last illness at Philadelphia, when his physician, Dr. Joseph Parrish, suggested consultation, replied: "Consultation—don't you know an ancient proverb says that in a multitude of counsel there is confusion and that the patient dies while the doctors are staring at each other.

We all realize that medical overloading is bad and the more doctors who are called in to see a case the less is the individual interest and responsibility felt by each one of them.

Erichsen taught that a man should be in general practice twenty years before adopting a specialty and in my student days, ten years' general work was considered necessary before specializing. I believe that after graduating, one or two years as an interne in a general hospital followed by two or three years of country work would sufficiently broaden one's perspective to make him eligible for special work.

Don't understand me as opposing a rational specialism but I am speaking against its abuse for specialism has done much to promote the advancement of scientific medicine, especially surgery, and it is gratifying to realize that the American surgeon is without a peer in any land or country. Medicine has become such an immense field that it is impossible for one man to keep abreast with its advances and the truism of the old proverb: "One science only will one genius fit, so vast is art so narrow human wit," is forcibly brought home to us in our daily work.

My criticism is not of individuals but of certain tendencies and methods and of the extreme tendencies toward ultra surgery. I believe that if we had less surgery and more old-fashioned country doctors that it would be infinitely better for humanity. I once heard John B. Deaver remark that if he was critically ill he would not want the fashionable doctor from Walnut or Chestnut street, but that the old-fashioned country doctor would be his choice. I was also told by the great Joe Price, of Philadelphia, that in his referred work he almost invariably found the diagnosis of the country doctor correct.

During my medical student days the requirement for entrance to the study of medicine was a year's work or reading under some reputable physician and this year's reading not only familiarized one with technical terms but it also gave very many valuable points that one missed in the college course.

The clinical thermometers were not self-registering and the hypodermic syringe was a curiosity. The giving of a hypodermic injection was considered a minor surgical operation. I read Wood and Watson's practice of medicine and was very much depressed upon matriculation to be told by the professor of practice that Wood was as far wrong about the practice of medicine as the fathers were about the circulations of the blood. I immediately bought Flint's latest edition and proceeded to get busy to make up for lost time. I also memorized Riley's Materia Medica, and worked hard on "Wood on the Physiological Action of Remedies." However, I could not fathom the difference between typhlitis and perityphlitis. Appendicitis had not then been invented and exploited by the surgeon.

The medicine of the future will be preventive medicine and our functions will be directed towards keeping people well, not trying to cure them. We might study with profit the methods of the heathen Chinese, who pay their physicians as long as they are well their stipend, ceasing as soon as they get sick.

I quote verbatim as germane to the subject of preventive medicine from The Human Factor, published by the Equitable Life Assurance Society and the New York Medical Journal.

These statistics are of great interest to physicians and sanitarians. The decrease in the death rate under 20 is 17.9 from 20 to 30 is 11.8, from 30 to 40 is 2.3.

The increase in the death rate from 40 to 50 is 13.2, from 50 to 60 is 29.2, from 60 and over is 26.4.

Chronic disease kills half of the people who die in the United States, or about 750,000 annually. Half of these, that is 375,000, would not die if the general health were as good as 30 years ago.

This enormous increase in the mortality rate from chronic disease has escaped the attention of sanitarians because of the

notable decrease in the general death rate, as the result of the decrease in deaths from acute disease, so great as to more than equal the increase in deaths from chronic disease.—New York Medical Journal.

The actuaries of prominent life insurance companies assert that the mortality from chronic diseases has doubled in the last thirty years. While medicine has accomplished wonders in reducing the mortality from acute disease, it has signally failed in the prevention and treatment of chronic disease. Therefore as the old remedies have been faithfully tried out and have been found wanting it is incumbent upon the scientific physician to get out of the old ruts and find something that will reduce this dreadful death rate from chronic disease.

"An American dies every minute from preventable causes."

Many a good health officer is 100 per cent efficient and only 15 per cent effective, because: You prefer a high death rate to a trifling increase in the tax rate. There is not an adequately-equipped or supported health department in the United States. There are still scores of prosperous towns and cities which have virtually no public health service at all.

Ignorance and carelessness are the chief causes of preventable sickness and death. It is as much your duty to dispel this ignorance, which is wrecking and destroying human life, as it is your duty to educate your children that they may live intelligent and useful lives.

Of what value is an education if one is too sick or too dead to use it? You can help educate people to have periodical health examinations to detect and head off disease in its incipiency.

And do you appreciate the great moral and religious side of this problem? Did you ever reflect upon the misery, squalor, vice and crime that result from all this preventable invalidism and mortality?

"THE HUMAN FACTOR."

However desirable preventive medicine may seem, just so long as we have ignorance, carelessness and selfishness among us, the sick, like the poor, will be with us always, therefore the problems of treating them will always be before us.

I would, therefore, urge upon you a careful and conscientious study of all the existing schools of therapeutics and to accept good wherever you may find it.

I would especially call your attention to the importance of a very thorough study of the internal secretions (the ductless glands), and physical therapeutics or the forces that nature has so generously placed within our reach.

As arterio-sclerosis and the chronic arterial degenerative diseases of middle age and of old life cause the majority of all deaths after fifty, this condition may possibly be caused by too much of the adrenal secretion being thrown into the circulation at a period of life when there is more or less atrophy of the Thyroid gland and therefore less vaso dilator stuff thrown into the circulation to counteract this condition.

More intelligent knowledge of preventive measures along with the study of the formations and therapy of the ductless glands and physical therapeutics will eventually so improve our systems of treatment that by early recognition and proper treatment the diseases of middle life will be largely shorn of their terrors. Our gifted and only Henry Watterson says that since the discovery of wireless that all things are possible.

The high frequency current from which wireless is obtained is destined in the near future to accomplish as great a revolution in medicine as it has already accomplished in the commercial world.

My clinical experience in the use of high frequency currents in the diseases of old age and middle life is my justifi-

cation for making these strong statements before this body of representative and up-to-date physicians. In conclusion, comrades, if I have succeeded in awakening your interest in a subject fraught with so much for the weal or woe of humanity, I shall feel more than repaid for my effort.

EUGENICS AND CONSERVATION.

Dr. F. R. Harris, Henderson.

In the words of Sir Francis Galton, "Eugenics is the study of the agencies under social control, that may improve or impair the racial qualities of future generations, either physically or mentally."

For centuries our leaders in thought have considered the possibility of improving the innate characteristics of the human race. This has been through a more or less haphazard way—rather speculatively—owing to a lack of data, but today, with the statistics at hand, it may be treated scientifically.

I shall endeavor to show that the race is deteriorating—and that the time is already approaching when we must take an inventory and "about face"—or go down in the racial struggle as so many nations have done before us.

We must not delude ourselves with the false belief that because we are Americans, Anglo-Saxons, therefore we are and will remain a great and dominant people. As scientific men it behooves us to study the facts as they are—not see them through some racial glamor—but, I repeat, see the facts as they are, and, having seen, let us take advantage of every known and knowable method of race-improvement until we become a race of surpassing vigor.

The aim of Eugenics is the production of a more healthy, more vigorous humanity. Again in the words of Galton, "The aim of Eugenics is to represent each class * * * by its best specimens. * * * To bring as many influences as can be reasonably employed to cause the useful classes in the community to contribute more than their present proportion to the next generation and to cause the useless, vicious classes

to contribute to the next generation less than their present proportion." It is common knowledge that we can and do create new and better types of plants and animals.

The time is here when we may give an order to a specialist specifying that we would like to have a plant or an animal embodying certain characteristics, and, after due lapse of time, the order is filled, just as though we were dealing with a tailor for a suit of clothes.

Admitting that this is true, the question that confronts us is: Whether this knowledge may be applied to the human race?

In answering this problem, we will take some of the most important specific questions to which workers in Eugenics have obtained definite answers.

First.—Are the physical characteristics of man inherited, and, if so, with what intensity in the different degrees of relationship? To answer this question it is necessary to measure precisely in a large number of individuals of certain degrees of relationship a series of definite physical characteristics, and then to get an expression of the degree to which a given characteristic in sons, say, is like that characteristic in fathers.

The best expression for this likeness has been found to be a mathematical constant, known as the Coefficient of Correlation. To explain this constant: It is of such character that if every son in a measured group were precisely like his father in respect to the characteristic measured, the coefficient measuring the resemblance would take the value one. If, on the other hand, the group of sons were no more like their fathers than they were like any group of men in general, the coefficient would take the value of zero. For degrees of resemblance between total absence of likeness and absolute identity, the coefficient will take the appropriate value between zero and one.

To answer the question whether physical characteristics are inherited in man, Professor Pearson collected an extensive series of data.

The data included measurements of stature, and length of the forearm and span in about 1,000 families, for the following relations: Father, mother, adult sons, adult daughters. The general character of the results of the analysis of these is as follows:

Character.	Relatives	Intensity of Resemblance as Measured by the Coefficient of Correlation.
Stature	Father and Son	.51
Span	Father and Son	.45
Forearm Length	Father and Son	.42
Stature	Mother and Daughter	.51
Span	Mother and Daughter	.45
Forearm Length	Mother and Daughter	.42

From these results there can be but one conclusion. It is that the characteristics measured are definitely inherited and to a sensible degree. The resemblance between parent and offspring is on the average about one-half as close as complete identity.

The average of the intensities of parental resemblance in the above table is .47.

The average intensity of the resemblance between brothers, from a similar table, is 53—larger than the former.

This leads to one of the well-grounded conclusions of Eugenics' work—that the herditary resemblance between brothers and sisters is, on the average, closer than that between parent and offspring.

In a similar way the hereditary resemblance between an individual and his remote ancestors, in respect to physical characteristics, has been measured.

Having settled the question that the physical characteristics of men are inherited, the next problem obviously is: Are mental and moral qualities likewise inherited, and, if so, with what degree of intensity? Without going into details, the general results may be stated as follows: The coefficients measuring the resemblance between brothers and sisters, in respect to eight physical characteristics studied, were found to take values substantially identical with those found for the coefficients measuring the resemblance between the same individuals in regard to a series of mental and moral characteristics. In other words, the evidence indicates that mental and moral qualities are inherited, and with about the same degree of intensity as physical characteristics.

Another investigator has shown from a study of Oxford class-lists that the degree of resemblance between father and son, and between adult brothers, in intellectual ability as measured by university scholarship is substantially the same as the resemblance in physical characteristics between such relatives.

Are specific diseases and pathological conditions generally inherited, and with what intensity? Workers in Eugenics find that some pathological conditions, at least, are inherited, and with about the same intensity as physical, mental and moral characteristics are.

I shall not take your time, in this presence, to indicate these pathological conditions, but take it for granted that you know.

Having shown that human characteristics are inherited—both good and bad and also liability to disease—it is pertinent to know what are the existing conditions relative to the fertility of desirable as compared with undesirable classes.

The results are shown by Professor Pearson in a lecture before Oxford University in a condensed table, as follows:

FERTILITY IN PATHOLOGICAL STOCKS.

Class.	No. of Children per Family.
Deaf Mutes, England	6.2
Deaf Mutes, America	6.1
Tuberculous Stock	5.7
Albinotic Stock	5.9
Insane Stock	6.0
Edinburg Degenerates	6.1
London Mentally Defective	7.0
Manchester Mentally Defective	6.3
Criminals	6.6
FERTILITY IN NORMAL STOCKS	
English Middle Class	6.4
English Intellectual Class	4.7
American Graduates (Harvard)	2.0
English Intellectuals	1.5

The ratio of prisoners to the total population in the United States has increased from 29 per 100,000 in 1850 to 125 per 100,000 in 1904.

In the United States the number of murders and homicides per million of the entire population has nearly trebled in the last fifteen years.

In the United States in 1880 there were 183 insane persons per 100,000, while in 1903 there were 225 insane persons per 100,000.

The superintendent of the Ohio Institute for the Feeble Minded wrote in 1902: "Unless preventive measures against the progressive increase of the defective classes are adopted, such a calamity as the gradual eclipse, slow decay and final disintegration of our present form of society and government is not only possible, but probable."

The latest census reports for the United States show as follows: Insane and feeble minded, blind, deaf, and deaf and dumb, paupers in institutions, prisoners, juvenile delinquents, etc., a rough total of nearly 3,000,000.

It is always the same story—rapid increase of the unfit, defective, insane, criminal; slow increase, even decrease, of the fit, normal or gifted stock.

It is with such conditions in mind that Whetham writes: "Although this suppression of the best blood of the country is a new disease in modern Europe, it is an old story in the history of nations and has been the prelude to the ruin of states and the decline and fall of empires."

With this appalling condition obtaining in this land of ours, it is incumbent upon us as scientific men and intelligent citizens to pause and consider what measures we shall adopt to correct it. I suggest that the chief *positive* methods of race-regeneration be educative rather than legislative. Give the facts the widest possible publicity in every available way.

In 1910 the Eugenics Record office was instituted at Cold Spring Harbor, Long Island, N. Y. The American Breeders' Association has appointed a committee and sub-committees under highly competent leaders for the collection of exact data of human heredity upon a large scale. We should encourage these institutions by sending pedigrees of families, both good and bad.

The scope of our census reports should be broadened as a means of securing data on human blood lines and tracing the descent of defects.

We should educate the young for parenthood. There are many more positive methods that might be suggested, but I leave the responsibility on you to help suggest them.

Legislative and negative methods—segregation or *permanent care* of the feeble minded under proper medical supervision.

Notification of venereal diseases. Why should we be required to notify the public of smallpox—both a preventable

and curable disease—and not notify, by legal enactment, syphilis, a disease that affects future generations?

An authority has tersely said, "If only one-half of one per cent. of the thirty million dollars annually spent on hospitals, twenty millions on insane asylums, twenty millions for almshouses, thirteen millions on prisons, and five millions on the feeble-minded, deaf and blind, were spent on the study of the bad germ plasm that makes necessary the annual expenditure of nearly 100 millions in the care of its produce, we might hope to learn just how it is being reproduced and the best way to diminish its further spread."

This is what I regard as the crux of the situation. Stop the *sources* instead of using all our means in alleviating the conditions.

Another suggestion is to obliterate the double standard by legal enactment.

Vasectomy with careful restrictions. For the last four years (since March, 1907), the laws of Indiana have permitted the performance of the operation of Vasectomy upon "confirmed criminals, idiots, rapists and imbeciles" after rigid scrutiny of all the mental and physical conditions of the individual case and upon the concurrent judgment of three competent and impartial persons. The title and significant parts of the text of this law are as follows:

An Act, entitled, An Act to prevent procreation of confirmed criminals, idiots, imbeciles and rapists—providing that superintendents, or boards of managers, of institutions where such persons are confined shall have the authority and are empowered to appoint a committee of experts, consisting of two physicians, to examine into the mental condition of such inmates.

Whereas, Heredity plays a most important part in the transmission of crime, idiocy and imbecility;

Therefore, Be it enacted by the General Assembly of the State of Indiana, that on and after the passage of this Act it shall be compulsory for each and every institution in the State, entrusted with the care of confirmed criminals, idiots, rapists and imbeciles, to appoint upon its staff, in addition to the regular institutional physician, two skilled surgeons of recognized ability, whose duty it shall be, in conjunction with the chief physician of the institution, to examine the mental and physical condition of such inmates as are recommended by the institutional physician and board of managers. If, in the judgment of this committee of experts and the board of managers, procreation is inadvisable, and there is no probability of improvement of the mental and physical condition of the inmate, it shall be lawful for the surgeons to perform such operation for the prevention of procreation as shall be decided safest and most effective.

But this operation shall not be performed except in cases that have been pronounced unimprovable: Provided, that in no case shall the consultation fee be more than three dollars to each expert, to be paid out of the funds appropriated for the maintenance of such institution.

In Indiana nearly a thousand persons have been successfully treated, many upon their own request. Laws similar to this have been passed in Oregon and Connecticut also. The Connecticut statute, enacted in August 1909, is as follows:

"*An Act,* concerning operations for the prevention of Procreation. Be it enacted by the Senate and House of Representatives in General Assembly convened:

Section 1. The directors of the State prison and the superintendents of State hospitals for the insane at Middletown and Norwich are hereby authorized and directed to appoint for each of said institutions, respectively, two skilled surgeons, who, in conjunction with the physician or surgeon in charge at each of said institutions, shall examine such persons as are

reported to them by the warden, superintendent, or the physician or surgeon in charge, to be persons by whom procreation would be inadvisable.

Such board shall examine the physical and mental condition of such persons, and their record and family history so far as the same can be ascertained, and if in the judgment of the majority of said board, procreation by any such would produce children with an inherited tendency to crime, insanity, feeble-mindedness, idiocy or imbecility, and there is no probability that the condition of any such person so examined will improve to such an extent as to render procreation by such person advisable, or, if the physicial and mental condition of any such person will be substantially improved thereby, then the said board shall appoint one of its members to perform the operation of Vasectomy or Oophorectomy, as the case may be, upon such person. Such operation shall be performed in a safe and humane manner, and the board making such examination, and the surgeon performing such operation, shall receive from the State such compensation, for services rendered, as the warden of the State prison or the superintendent of either of such hospitals shall deem reasonable.

Section 2. Except as authorized by this Act, every person who shall perform, encourage, assist in, or otherwise promote the performance of either of the operations described in Section 1 of this Act, for the purpose of destroying the power to procreate the human species; or any person who shall knowingly permit either of such operations to be performed upon such person—unless the same be a medical necessity—shall be fined not more than $1,000.00, or imprisoned in the State prison not more than 5 years, or both."

Someone has so well said, "Could such a law be enforced in the whole United States, less than four generations would eliminate nine-tenths of the crime, insanity and sickness of the

present generation in our land. Asylums, prisons and hospitals would decrease, and the problems of the unemployed, the indigent old, and the hopelessly degenerate would cease to trouble civilization."

Many countries, from Servia to Argentine Republic, have statutes forbidding marriage of the insane, idiots, deaf and dumb, certain classes of criminals and persons afflicted with certain contagious diseases.

"The first and main point is to secure the general intellectual acceptance of Eugenics as a hopeful and most important study. Then let its principles work into the heart of the nation, who will gradually give practical effect to them in ways that we may not wholly foresee."

And Whetham begins: "Hitherto the development of our race has been unconscious, and we have been allowed no responsibility for its right course. Now, in the fullness of time * * * we are treated as children no more, and the conscious fashioning of the human race is given into our hands. Let us put away childish things, stand up with open eyes, and face our responsibilities."

We have spent our millions upon the conditions of life—why not pursue the rational course and spend something on life itself? I have not a word to say against anything and everything to ameliorate the conditions of weak and suffering humanity, but I do plead that we use the knowledge we have and reproduce the best from the best, and in so far as we can *curtail the reproduction* of the criminal, the insane, the idiot, the imbecile and all degenerate classes. And may it be said of us "and they that shall be of Thee shall build the old waste places; Thou shalt raise up the foundations of many generations; and Thou shalt be called the Repairer of the breach, the Restorer of paths to dwell in."

(For these ends may Science and Commonsense join hands over the cradle of the unborn!)

TUBERCULIN DOSAGE—A FURTHER STUDY OF THE VALUE OF RATIO METHOD OF DOSAGE INCREASE.

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The past decade has witnessed a rapid spread in the administration of tuberculin for therapeutic purposes. The certain beneficial results which accrued from its use have gradually become common knowledge. A wealth of detail concerning its administration was the work of a mere handful of men who continued to use this biologic agent following the violent reaction against it inaugurated by the German pathologist, Rudolf Virchow. The indication for the use of this drug, the contra-indications; the dose, the interval of dose; all were thoroughly studied, as stated above, by the few careful observers working in different parts of the world during the closing decade for the nineteenth century.

The swing of the pendulum of a popular approval toward this medicinal agent was as slow, as the preceding opposing wave had been rapid and violent.

Now, that an ever increasing number of men, however, are giving tuberculin, the matter of the greatest possible amount of practical detail is of the utmost importance. Even the selection of a particular variety of tuberculin is hardly to be compared with a knowledge of the indications, contra-indications, dose and interval of dose.

I wish to take up, what seems to me to be even the most important of the above four, certainly it is the most difficult to master, considering the perplexing conditions which constantly arise, viz.: tuberculin dosage.

The matter of dosage of the ordinary drug is a relatively fixed quantity, the extremes being comparatively slight; with the dosage, on the other hand, of an immunizing agent, like tuberculin, the difference between minimum and maximum doses is at times a hundred thousand fold or even more. What would be a harmless dose for one tuberculous patient would become a highly dangerous one for another; and, of course, the dose varies constantly from week to week with the same patient undergoing an increase of tuberculin immunity, or as a result of intercurrent complications. These are all familiar facts, but attention is called to them to show the great importance of a still further study and knowledge of tuberculin dosage.

Now a harmful or excessive dose of this agent is commonly characterized as that of a reaction. Reactions may be local—at the site of injection, focal—at the focus or foci of infection, systematic and subjective. They may be so insignificant and evanescent as to altogether escape detection; or they may be but slightly more marked leaving the observer in doubt. Beyond this point we come to those cases where the reaction is mild but unmistakable, on up to the severer grades of reactions. The scope of this paper cannot cover the detail of this phase of the subject.

The danger in the therapeutic administration of tuberculin lies largely in the violent reaction. Surely few drugs can more appropriately be likened unto a double-edged sword; for, if it is capable of doing much good, it is likewise potent in harmful results if unskillfully administered. At this juncture, it would be well enough to state the positions held by different men with relation to what might be called salutary reactions. Some contend that the dose should even be so small that no effects can be detected—the so-called reactionless cure. The large majority of clinicians, I should say, feel that the greatest immunizing efficiency lies in *very* mild reactions; a very small

minority only, contending that there is a certain value in the occasional frank reaction. All agree that in the severe reaction lurks the danger. Now it is exactly to safeguard the patient against this very danger that this paper is written.

In September 1909, I read a paper before the Mecklenburg County Medical Society setting forth a ratio method of graduation of tuberculin dosage, a plan of dosage which I had formulated, and which I have used continuously ever since. It has been so successful in my hands that I determined to present a further report upon it.

Everyone who has had any measure of experience with the use of this drug knows that it is in the earlier doses of any given strength or dilution of tuberculin wherein the danger lies. It is hardly necessary to state that the method of diluting tuberculin universally followed is the one-in-ten plan. To one part of the pure drug is added nine parts of the diluting solution. To one part of this latter solution nine parts again of the diluting solution are added, and so on until a solution is reached of a sufficient attenuation for safe administration. The number of these decimal dilutions depends upon the toxicity of the particular variety of tuberculin selected. The tuberculin used by the writer is Deny's bouillon filtrate, a tuberculin of high toxicity, the initial strength for febrile cases being the seventh decimal dilution, and for non-febrile cases the sixth dilution is sufficiently attentuated; c. c. of the former equaling 1-10,000 m. g., and of the latter, 1-1,000 m. g.

The series of charts which are shown in this article, as is seen are arranged in pairs, the one on the left graphically representing the volume of dosage increase as followed by different authorities in this line of work, while the companion chart on the right represents in a correspondingly graphic manner the actual percentage of increase of the accompanying volumetric scale.

Fig. 1 shows on the left a very common method of giving tuberculin. The initial dose of any particular strength of the drug being 1 c. c., this is followed by a second dose of 2 c. c., this in turn is again followed 3 c. c., etc.; each dose exceeding the preceding one by exactly 1-10 of a c. . I will say too that this is the dose scale that is (or was at least), advised by Denys as a safe method in the giving of the particular variety of tuberculin which he brought out, viz.: the bouillon filtrate. The volumetric chart shows it to be a perfect ascending scale.

At first thought it certainly would seem to be a most gradual method of dosage increase. If, however, we compare this volumetric chart with its accompanying scale which represents the percentage of increase of each dose to the preceding one, the faults are not only glaring, but really quite astonishing. It is seen that on giving the second dose the amount of tuberculin to which the patient is subjected *is increased by* 100%. With the third dose the amount of increase falls to 50%, and if the chart is consulted it is seen that the percentage of dosage increases from this point falls in the following manner, viz.: 33.3%, 25%, 20%, 16.6%, 14.3%, 12.5%, and 11.1%. It should perhaps be stated here that instead of giving the ful 1 c. c., it is common to give instead the 1 c. c. of the next and more concentrated solution, so that the actual number of doses administered according to this plan, of any given strength, is nine instead of ten.

Now if the object of administering tuberculin is the production of a greater immunity; and, further, if it is highly desirable to attain this immunity in the most gradual manner possible; then the above scale is surely a most faulty and unscientific manner of accomplishing this result. In point of fact, the patient is subjected to a dangerous amount of tuberculin at one end of the scale; whilst, at the other, the increase is appreciably under what the patient can take with safety.

There is nothing new in the danger attending the earlier doses of any given strength of tuberculin. Many have uttered warnings, and there have been numerous suggestions made for splitting the dose, and, at the other end of the scale, doubling up, etc. Each man has formulated his own scale according to his own particular notion, but practically, in no instance, with any scientific accuracy. For example:

Fig. 2 shows a scale recommended by Lawrison Brown in which the earlier doses have been advanced by only .05 c. c., and the last two he has advanced by .200 c. c. The scale of percentage increases, while an improvement over the preceding one, has a dose variation of from .25 to .50%.

Fig. 3 shows a dose scale by the same observer in which it will be seen that the variation of dose is from 33.3 to 150%.

Fig. 4 represents a dose scale advocated by Bandilier and Roempke. While it has fewer doses to a given strength, it is easily seen that the earlier doses have been made relatively much smaller than the later ones. The percentage of dose increase here varies from 40% to 100%.

Fig. 5 is a dose scale from Pottenger, and again is seen the same variation of the enlargement of dose, viz.: from 25% to 71%.

The number of dose scales might be said to vary about in the same proportion as the number of men administering this drug, each one striving for a perfect method, but so far as I am aware, no one attaining it.

Now it seemed to me that it ought to be possible to work out a dose scale for the gradual administration of tuberculin by which the percentage of increase of each dose should be the same; or, in other words, a scale so formulated, that each dose should bear the same relation to the previous dose, as the previous dose did to the one preceding it—a perfect ratio system.

As a result of no little empirical calculation I succeeded in working out just such a ratio dose scale (See Fig. 6), which

is as follows: .10 c.c., .13 c.c. .17 c.c. .22 c.c. .28 c.c. .36 c.c. .46 c.c. .60 c.c. .77 c.c. 1.00 c.c. A casual glance at this scale is sufficient for a person to, at once, recognize the gradual arithmetical increase of dosage. The volumetric increase of the earlier doses is much less than .1 of a c. c., whilst the later doses considerably exceed this volume; but the percentage of increase, the important thing, remains constantly the same, viz.: 30%. It will be observed that I have arranged for the usual nine doses to any given strength, which seems to be the more conservative method of dosage now followed. If, however, for any reason, it is desired to advance the dosage more rapidly, the same perfect ratio can be maintained by increasing by two points on the scale instead of by one; and, conversely, if there is reason for still greater conservatism the intervals, as given, can be divided into two.

After following this plan of dosage for three years, I can truthfully say that I do not get the mild reactions at one part of the scale more than I do at the other, and furthermore, as a result of it, I have absolutely eliminated the dangerous reaction. The only practical difficulty in the ratio scale is the one of memorizing the succeeding doses. Those who are giving the drug all the time can easily carry the scale in their minds, but it is not so easily done for others.

To increase the practicability of the scale, the Randall-Faichney people of Boston have engraved it on their regular "Sub-1" tuberculin syringe. This latter instrument is also graduated in 1-100 c.c. and is particularly adapted to careful dosage.

I am quite willing to concede that there is not quite the same necessity for a specialist in tuberculosis work to be in possession of such a dose scale, for certain it is, an increasing experience gives one almost a tuberculin sense, but the drug is now constantly being given by a large and increasing number of general practitioners and specialists alike, not only in pul-

monary tuberculosis but in the other forms of tuberculosis as well, and the ratio dose scale which I have devised should be of great value in safeguarding the patient against the dangerous reaction.

I would not, for a moment, be understood to convey the impression that such a dose scale sums up the knowledge required to give tuberculin. This scale, like all scales, is for the gradual increase of the drug—one might say—without reaction. When reactions occur, even the mild ones, it is a matter of judgment as to whether one should repeat the same dose, decrease it, lengthen the interval or, indeed, some combination of any two of them. In, however, the "running up" to reaction dosages, and even proceeding beyond this point (gradually of course) the ratio scale is of inestimable value.

The new scale teaches one that the large dose or the small dose is a matter of percentage increase, rather than one of volume. There is one point of the scale wherein there is a certain danger of reaction, due to an entirely ulterior cause, and that is with the very first dose of a new strength. All persons giving tuberculin soon learn that the stronger solutions do not lose in toxicity as rapidly as do the weaker ones, and sometimes in advancing to the stronger solution it is found that it is something more than ten times as strong as the former, particularly if there has been a recent "new brew."

I desire, before closing, to call attention to another matter that has simplified record keeping in my tuberculin dosage. I personally pay little attention to the actual number of m.g. the patient is receiving from dose to dose. In the first place, unlike other medicinal agents, there is no actual large or small of the drug in so far as the effects upon the patient is concerned. Everything depends upon the tuberculin immunity —natural or acquired—of the individual to whom it is administered. More than this, there is no unanimity of opinion that there is any particular dose to which one should attain in im-

munizing a patient. One patient will reach his limit of tolerance with a dose of a hundred or even a thousand fold smaller than will another patient, each, however, getting the same protective effects. As a result I have adopted a decimal method of numbering my dilutions, the one-tenth strength being called No. 1, the one-hundredth strength being No. 2, etc., and in recording the dose, if I am, say injecting the 5th (decimal) dilution in doses of .10 c. c. it is recorded as 5-.10, if I am giving .77 c. c. of the third dilution, I record thus 3-.77. Of course I know that 1 c.c. of No. 3= 1 m.g., and in the case of No. 5, 1 c. c.=.01 m. g., and the exact dose could be closely calculated in m. g., but I do not look upon it as necessary for ordinary records.

Conclusion.

First. It is highly desirable that tuberculin be administered in the most gradual manner possible.

Second. The dose scales commonly followed even by the most skilled men show a marked irregularity of dosage increase.

Third. The dose scale worked out by the writer represents a perfectly even percentage increase and the ratio of one dose to another remains, at all times, exactly the same.

THE TREATMENT OF PELLAGRA.

E. H. Bowling, B. S., M. D., Durham.

The cause of pellagra is a mooted question. For a time it was thought to be caused by the ingestion of ordinary maize when it had undergone certain putrefactive or decomposing stages. This theory is still adhered to by a no means inconsiderable per cent of the medical fraternity; but, by a large majority I think it has been discarded as an untenable theory. Then the theory of the Buffalo gnat was sprung, and those who were convinced that the disease was not caused by injured corn, seized on this as a possible explanation of the cause of the malady; but, after more mature deliberation I think that nearly everyone will now agree that this theory will not hold good and so far as I know the gnat theory now numbers very few adherents.

Then Dr. Mizzell, of Atlanta, Ga., suggested the theory, with almost convincing arguments that Pellagra was caused by the ingestion as a food of the semi-drying oils, and in our case more especially, of cottonseed oil as an article of human food. Dr. Mizzell advanced very ingenious arguments to substantiate his position and his deductions seem indeed plausible, but, when we note the existence of pellagra among people who never eat nor ever did eat cottonseed oil in any form his arguments fall to the ground, because it is axiomatic that the same cause would have to be present in every case to produce the characteristic disease, and the rule would have to hold good without any exceptions. I have seen and treated several cases who came from what we term the backwoods; sturdy yeomen, who lived upon their farms, raised their own supplies and always had some to sell, who did not know of the existence of such a food, and who had never to their knowledge eaten any of it, and I dare assert that this same experi-

ence has fallen to the lot of many physicians who have had any considerable experience in the treatment of this malady.

Later, Dr. A. L. Nason, of Maben, Miss., has advanced the theory that pellagra is caused by the presence of hookworms. The doctor has made microscopical examinations of the fecal ejecta of a great number of pellagrins and has almost without exception detected the presence of the offending hookworm. Further acting upon this theory and giving treatment for the removal of the offending parasite he has made some very remarkable cures and has relieved, and to all appearances cured, a percentage of his patients that any of us would feel elated to even approach. Still, I cannot accept in toto the good doctor's deductions. That the doctor finds hookworms is not to be doubted, but should he search with equal diligence methinks he would find the existence of malaria in an equal number of patients, and if we were to base our conclusions on the mere presence of the hookworm in the alimentary tract of the pellagrin we might with equal propriety conclude that the disease was caused by malaria. Then uncinanaris is more particularly a disease of child and young adult life while pellagra while not confined to any age is more particularly a disease of middle and advanced life; and besides with the wide spread of hookworms it is reasonable to suppose that pellagra would be much more prevalent than it is now known to exist. Besides an argument that I think successfully combats the theory that hookworms are a cause of pellagra is the fact that uncinanaris has been known to exist from time immemorial, pellagra is only a recent invader of our coasts.

Should all these theories be faulty then the question would naturally arise: What is the cause of pellagra? My theory is: That it is produced by the ingestion of a pathological germ, which has probably not yet been isolated, into the stomach and that this germ can only take hold in a stomach which is either neutral or alkaline in its gastric juices. I believe that

should the stomach have a normal amount or an excess of hydrochloric acid that this acid immediately proves destructive to the life or at least to the procreative ability of the germ and it is innocuous. In all my experience I have never yet seen a patient suffering with pellagra who was or had in recent years suffered with heartburn or any form of sour stomach and when I have tested the gastric contents I have never yet been able to discover the slightest trace of hydrochloric acid and further, when my treatment was directed toward restoring the normal acid to the stomach and I succeeded, it has always been followed by immediate and marked improvement of the condition of the patient.

I think that all observers have noted a disturbed metabolism and assimilation which I account for by the toxines produced by the causative germ, this brings about a degeneration of cell force and function which with the absorbed ptomaines and leucomaines gives up a vicious blood current which causes a degenerative condition of the whole human mechanism which manifestation is fiirst evidenced on the digestive system. If we make careful inquiries we will find that the gastric and nervous symptoms antedate the characteristic rash which some of us note as the first symptoms, by at least twelve months.

Either the germ or the resulting poison have an irritating effect upon the lining membranes of the alimentary canal which as the disease advances goes on to denudation. thus opening up vast areas for the absorption into the already vitiated blood current of noxious ptomaines thus interfering with the important glands of disgestion and absorption which of course interferes with normal metabolism and prevents the formation of normal healthy blood so we see that one noxious element assists the other and at last the system surcharged with abnormal and poisonous material throws out the red flag of danger of the rash upon the hands and we can now easily diagnose the disease.

This circulating poison not only interferes with digestion and assimilation but it also blocks the adrenals, the pluitary body and the thyroid gland, stops the formation of adrenextidose which controls the lumen of the blood vessels which together with the irritation of the gyralis centralis anterior section of the brain causes the dilatation and consequent stasis of the blood which accounts for the congestion and rash which is so characteristic of the disease. This same condition, while visible on the hands, neck and face is taking place in all parts of the body, for we have all noted the torpidity of the liver, how it does not turn out a normal quantity of even the vitiated bile which is nature's antiseptic to the alimentary canal, thus allowing the pathogenic germs to run riot, generating more and more poisonous compounds thus increasing the already toxic condition until a kindly dementia draws the curtain over the realization of the patient's own condition and humane death closes the scene.

That the blood is vitiated is plainly evidenced by the gradual but progressive loss of haemoglobin which can be noted in all cases, this condition with the absence of hydrochloric acid in the stomach is always very suggestive of pellagra. With the interference of metabolism we have perverted secretions; all mucus membranes give off a viscid mucous, note the ropy saliva, the leucorrhoea, etc. In the stomach we note the entire absence of hydrochloric acid with practically no pepsin or rennin. We will find an increase of the mononcucler leucocytes and the myelocytes while the volume is decreased.

I have noted further, in every case which I have tested that we have an increased motility of the stomach. If we give a test meal and try to withdraw the contents for examination we will find only glairy mucous showing an irritable condition of the stomach caused by the influence of causative factor, and we will find that this condition forcing the undigested or partly digested food down into a diseased and irritated bowel only

adds fuel to the fire and increases the pathological condition. In the more advanced stages of the disease, after the nervous system has been depressed by the poison about the time we note the loss of the reflexes, we will find that we have an opposite condition, that is, a stomach stasis and when we give a test breakfast and withdraw it about an hour afterwards we will get the debris of the supper before. This condition only comes on when the whole nervous system is partially paralyzed from the effect of the poison.

Symptoms.

In the early stages nearly all cases are constipated, as the disease advances and the system becomes more and more surcharged with the poison nature makes a desperate effort to rid the body of the accumulated poison and we find a persistent and aggravated diarrhoea. We should never attempt to check this but take our cue from nature and assist in the eliminative process.

In every case of pellagra if we inquire into the minute history we will find an indigestion or an interference with digestion dating back for at least one year and possibly several years, with a general malaise, with the tired feeling on rising, with no ambition and a disposition to magnify all complaints, they often secure some quack work on medicine which they study with assiduity and they can imagine themselves afflicted with all the ills there enumerated, but when the disease manifests itself in the characteristic rash I have noted that they can often give a plausible reason such as sunburn, or using some brand of soap.

My experience is that pellagrins as a rule are not afraid of pellagra. It is sometimes hard to convince them that they are afflicted with the disease and when so convinced they do not evince the least fear of the consequences.

The nervous system early shows the effect of the circulating poison in the blood, a fullness in the head, the occiput giving

the most trouble, they are usually morose, do not care for company and sometimes even avoiding it; usually suspicious and melancholic, irritable and a tendency to find fault, very often double vision and in females when the disease is far advanced we find typical hysteria; I have found that when the haemoglobin gets to sixty per cent females always develop hysteria. A burning sensation in the hands and feet is very characteristic. I had one patient who could only be comfortable while pressing the feet against a block of ice.

All reflexes are exaggerated in the beginning but are completely lost before the end. Pellagra is the most deceptive of diseases as the recurring attacks are a year apart, and as the eruption which most patients and a great many doctors look upon as the disease will vanish away for one or two years under any or no treatment, it gives the patient a sense of security and deceives the doctor into believing that the patient is cured; while the insidious invader is getting in its deadly work and slowly but surely sending the patient the swiftly declining road to death. In my opinion the secret of meeting and conquering the deadly scourge lies in the fact of an early diagnosis and insisting on treating the patient for at least one year or through the next yearly exacerbation.

I am so convinced of the soundness of this that I will not take the responsibility of a case unless he will agree to stay under my care for at least one year and I think we will all come to the same conclusion when we see a few of our supposed cured patients develop the disease in more malignant form the next year.

Treatment.

If the theory I have outlined above is correct, and I wish to add by way of parenthesis, that it is only a theory (there is nothing proved about it except the results I get from following a line of treatment based upon this theory), then the treatment should be and is comparatively simple. My first thought is elimination. This I try to cure by purging and

my favorite is castor oil, this I give in tablespoonful doses every night. I pay no attention to the bowel movement unless I am not getting free enough evacuation, then I increase the dose. To my mind castor oil has several advantages over any other purgative, first I give it for the elimination, then it soothes the inflamed mucous membranes and third, what is not used up as a purgative is absorbed and helps to strengthen the patient. As a further means in a elimination when the case is desperate I give hypodermoclysis from one pint to half-gallon normal salt solution once a day and I have seen this have wonderful effect. In connection with this I give stomach lavage once or twice a day.

As a gastro intestinal antiseptic I have never found anything that will equal chlorine water given in teaspoonful doses every two hours. The chlorine water should always be freshly prepared and I would advise every doctor to advise his druggist how to prepare it. Some stomachs are so inflamed that they cannot tolerate the chlorine water at first. When this is the case I get the stomach inflammation under control with a formula of Condurango, Listerine and Carapeptic Liquid, then begin the chlorine water.

After the gastro intestinal tract has been soothed and the acute symptoms have been subdued I bend my energies towards restoring the acid to the stomach and the haemoglobin to the blood. To acidify the stomach my favorite is a solution of one drachm of dried sulphate of iron, one drachm of nitrate of potash and nitrohydrochloric acid enough to make one ounce. Of this I give from six to eight drops after meals. I give this until I am satisfied I have the stomach in a normal acid condition.

If the haemoglobin has not yet been restored to a normal point I give Elix. Ferri et Mangan pep. for awhile and if it does not accomplish the task, I give cacodylate of soda injections and this has given me wonderful results in some cases.

During the treatment I nearly always give some calcium sulphate and urotropine, I think they are both valuable drugs and have an important part in the treatment of the disease, but I would not depend on them alone.

You have doubtless noticed that I give no arsenic. I have never yet seen where it did my patients any good unless it was in the convalescing stage when I give it for the beneficial effect upon the blood.

I have never used Salvarsan, but cannot see where the benefit would accrue, to kill the poison already in the blood current and not remove the source of supply. If my theory is right, and my experience bears out the theory, if we will remove the source of supply the system will rid itself of the accumulated poison if we assist in the elimination.

Is Pellagra Infectious?

I think so, else how can we account for the alarming spread of the disease. I don't believe it contagious, but I do believe it infective like typhoid.

How Can We Protect Ourselves?

My advice to my patients who think themselves susceptible, or where I think they are threatened or in any way liable to contract the disease, is to eat lots of fruit, to drink lemonade ad lib, to eat pickle and use every other means of keeping the stomach in an acid condition, and if the patient is already in my opinion infected with the disease I begin treatment as though I knew he was infected, for this is one instance in which he is four times armed "who gets his blow in fust."

If it be true that the pathological germ cannot flourish in an acid medium then it behooves us to try to acidify the patient.

As I have said before this only a theory that has been worked out by watching the course of the disease in some seventy cases and it is given to the profession for what it is worth to be tested and proved or disproved by men who have more experience and ability than I possess.

SOME OBSERVATIONS ON TUMORS OF THE BRAIN, WITH REPORT OF CASES.

Dr. J. P. Munroe, Charlotte.

Tumor of the brain is much more common than is generally supposed. Brun says when a general practitioner affirms that he has never encountered an instance, it is an acknowledgment that patients with tumor have passed through his hands unrecognized. By far the larger number are never diagnosed, and in the large majority of those in which the diagnosis is made, the discovery comes too late for any effective treatment to be applied.

It is true that in most instances treatment can do little more than alleviate the symptoms and add a few months or years to life, yet, it is all important that the diagnosis be made early if even temporary relief is to be expected.

Little is known as to the cause of brain tumors, and I will briefly refer to the fact that malignant growth may occur here by Metastasis and that Traumatism is occasionally responsible for it. The remains of an old blood clot, or arachnoid fluid effused by trauma may be the starting point of a Cyst. Again trauma while not actually causing may serve to bring into the open the symptoms of a previously obscure growth. This is illustrated in one of the cases I shall recite.

As to the pathology of brain tumors, it was formerly thought that Sarcoma was the most frequent form. This idea was based on Allen Starr's report of 600 cases in which the histological differentiation was imperfect. Later and more accurate examinations of the series of cases of Cushing's proved that Gliomata occur more often than any other form of brain tumor. In a series of 69 cases Sarcoma occurred only once.

Gliomata thirty-eight times, and there were four Tubercles and three Syphilomas.

In the four cases that I shall report there was one Cyst, one Syphiloma and two Gliomata.

The symptoms are usually divided into two classes. First, general symptoms, produced by increase of tension, which affects the brain by deranging the circulation of the blood and cerebrospinal fluid, and strengthening the Dura Mater and flax. Second, the focal or localizing symptoms produced by irritation or destruction of certain nerve tracts.

General Symptoms. The general symptoms which from time immemorial have been regarded as classical indications of brain tumor are headache, vomiting, usually without nausea, the so-called projectile, and choked disk.

The headache is rarely localized at any particular place, but even if it is, it is not definitely suggestive of the location of the tumor, unless it lies immediately under the cranium. Vomiting is not nearly so frequent as is generally supposed, and was present in only one of the cases here cited. Choked disk when present is one of the most valuable signs of tumor, but as it indicates a high degree of intra-cranial pressure and serious damage already done, the diagnosis ought, if possible, be made before this symptom occurs.

Besides this trio of classical symptoms, there are two others of considerable importance, viz: Tendency of the brain to herniate and dischromatopsia. The first of these is indicated by a subjective sensation of fullness in the head, a dilatation of the retinal vessels, and a dilatation and tortuosity of the veins of the scalp and of the eyelids. Dischromatopsia is the interlacing and inversion of the color fields. This condition has been exhaustively studied by Cushing and his assistants, and they regard it an important early diagnostic sign.

Vertigo or dizziness is also an early sign frequently present, especially in cerebellar tumors.

Focal Symptoms. It is not my purpose to discuss here the various focalizing symptoms referable to the different parts of the brain. It may be mentioned, however, that cerebellar tumors produce choked disk in a higher percentage of cases than tumors elsewhere. Tumors in this region also will produce the highly significant cerebellar ataxia. The Rhomburg symptom is absent, thus distinguishing it from spinal ataxi, the gait is staggering with perhaps a tendency to deviate or fall toward the side of the lesion.

Tumors of the Hypophysis are attracting a good deal of attention at this time. The effect of a tumor here may be directly on the gland itself, interfering with its secretions, or upon the neighboring structures, causing damage by pressure. By pressing upon the inner side of the optic tracts, it may cause bitemporal hemianopsia or there may be a total blindness in one eye and partial or none at all in the other, depending upon the direction in which the tumor grows.

Differential Diagnosis. The conditions which are most liable to be mistaken for brain tumors are hysteria, apoplexy, nephritis, aneurisms and abscess.

Hysteria is especially hard to differentiate in certain chronic long standing cases. Cushing relates the case of a woman who had suffered for twenty years with headaches, intermittent heminanopsia, inversion of the color field, periods of semi-consciousness and hemianaesthesia, all of which had led to the diagnosis of hysteria, until a terminal choked disk betrayed a benign tumor of the right temporal region. Generally speaking one would wait for the indication of organic changes such as choked disk, absence of knee jerks, cerebral nerve palsies and the like, before excluding hysteria.

Apoplexy usually has a sudden onset of symptoms, but this is not always the case, and sometimes later developments must be awaited to determine the matter definitely. A tumor presents progressive symptoms, which get worse from day to day.

Apoplexy usually improves from day to day after the first onset.

Nephritis sometimes presents many of the general symptoms of tumor, but seldom the focal ones or any changes in the reflexes. Urinary analysis would be an important factor.

Abscess would be usually associated with a history of otitis media, or an infected cranial wound. In one of my cases here recited the irregular fever (although slight), pain in the ear, and a comparatively high leucocyte count were strongly suggestive at one time of abscess. An examination by an Aural surgeon excluded middle ear disease and disappearance of fever while other symptoms increased, led to the exclusion of abscess.

Treatment. Medicines offer no hope of relief except in the specific cases. Mercury and iodide of potassium in increasing doses should be given in every case of known infection, and it is customary to give them for a short period at least, in all other cases as a therapeutic test. It must be remembered, however, that this test is often misleading, for many cases of glioma will improve temporarily under the use of large doses of the iodides.

A radical operation should be done on every case where the tumor is distinctly localized, and at a point that can be reached. Other cases with symptoms of severe introcranical pressure should have Decrompressive Operation. This gives the brain an opportunity to herniate through the large opening in the bone, and affords great relief of symptoms. Furthermore, it is possible that the growth of the tumor will later on afford localizing symptoms that will make possible a radical operation for removal. I must call attention here to the fact that spinal puncture which may relieve the pressure temporarily is a dangerous procedure, because it is liable to cause hernia of the Medulla and Cerebellum into the Foramnam Magnum, and thus bring about sudden death.

Case 1. A girl ten years old seen in March, 1910, symptoms of vertigo, staggering gait, etc., had commenced a previous September and increased in severity until the present time. She had fallen on her head from a wagon in August. She is now totally blind, has Choked Disk, slight Nystagnus, unable to walk or even stand without assistance. Deep reflexes absent, no muscular wasting or electrical changes. No definite specific history, no Hutchison teeth, but the teeth notched like a saw, and the Inguinal, Cervical, and Epitrochlear glands slightly enlarged. Diagnosis Cerebellar tumor of probable specific origin. Treatment, mercury by inunction, Iodides in increasing doses; result: within two months she was able to walk and was practically well, except for the blindness, due to optic atrophy.

Case 2. Woman 18 years of age, seen by the courtesy of Dr. Henry Norris. Almost totally blind, Choked Disk, Nystagmus marked, could walk only with assistance, staggering gait with tendency to fall toward the left side; deep reflexes absent. Diagnosis Cerebellar tumor, probably on the left side; operation advised. Dr. Norris decided to operate in two stages. He did the first stage and the patient died about 12 hours afterwards with symptoms of acute hyperthyroidism. Autopsy revealed a Cyst about the size of a hen's egg on the left side.

Case 3. Man 50 years of age had been suffering for three weeks with deafness and paralysis of the muscles of the eye, especially the external recti, referred to me by Dr. Murphy, who had found nothing in the ears to explain the deafness; a weak and staggering gait had suggested spinal or brain disorder. I found the eyes protruding and congested; the eyelids with distended venules; the cranial veins also distended and tortuous. Pupils small and sluggish. Deafness more marked on the left side. No evidence of specific infection, except enlarged inguinal glands.

Diagnosis—Cerebello-Pontine tumor.

I advised a continuance of mercury and iodine, upon which the doctor had already placed him, but I also urged immediate consultation with a surgeon with a view to removing if possible the Cerebello-Pontine tumor which I believed to be pressing upon the cranial nerves, as well as upon the motor tracts to the legs and arms. He was taken to a prominent surgeon, who had a Wasserman test made on him, which proved to be positive. About this time, too, after he had been on specific treatment for about a week, he seemed to be improving. These two things held out a false hope of specific infection and a probable cure by medicine. Soon however, the symptoms grew rapidly worse. Dr. Cushing to whom he was taken later considered the pressure on the respiratory centers so great as to make an anaesthetic dangerous. Patient died a few weeks afterwards, and the autopsy revealed a large glioma in the Cerebello-Pontine angle.

Case 4. Man 56 years of age consulted my colleague, Dr. Whisnant, for severe pain in the left ear. The doctor could find nothing in the ear to explain the pain. He noticed however, during this examination, a slight facial paralysis on the left side and referred the case to me. There was no deafness. I found not only facial paralysis, but a decided weakness in the left leg and arm. The deep reflexes were exaggerated on both sides, especially the left. My first inclination was to regard it a case of apoplexy, perhaps a small hemorrhage in the lenticular region. Pupils normal, eye grounds normal, but eyes congested and veins on the lid and forehead dilated and tortuous. There was no vomiting, but mild mental symptoms appeared in a few days after the first examination. Within about three days also a slight fever developed and an examination of the blood showed a leucocytosis of 15,000. The paralytic and spastic symptoms increased rapidly. The pain in the ear decreased very materially, but a severe agonizing pain came on and was localized in the

right temple region. Loss of memory and slight delusions gradually appeared. A small abscess was thought to be partly responsible for the leucocytosis, but this was not materially effected by opening and cleaning out the abscess. A Wasserman test proved negative, but the hope that specific treatment might do good, led me to put him on mercury and Iodides. He improved for a few days, then rapidly grew worse, and died within four weeks from the first appearance of the symptoms. The location of the tumor, which I believed to be present, was evidently in the lenticular region, and beyond hope of being reached by an operation. Before death his left side was completely paralyzed and the spasticity of the leg so great that it stood out above the bed with the knee flexed; the right leg was also very spastic and partially paralyzed. The autopsy revealed the tumor located in the lenticular regions on the left side, but pressing also on the right hemisphere.

An examination under the miscroscope showed it to be a glioma. This is a specimen I present here for your examination.

THE LIFE OF THE PHYSICIAN—A SYMPOSIUM.

N. B. ADAMS, MURPHY.

We have had our share of success—our increment of knowledge—our happy days when the sunshine and the breezes played about our heads, and the sense of well being warmed our hearts. God has been good to us, far beyond our deserts.

Our meed of failure—of adversity—the modicum of dark days, rainy days, hurricane days, when we were fain to bend our heads before the tempest—days of sorrow that whiten the thinning locks on our temples—Bismillah; God is great; His will be done.

The only use we can make of the past, and that is to take warning by its mistakes and encouragement by its successes. The man who fills our ears with past successes is a back number. The one who spends his days bewailing past mistakes and past wrongs is foolish. The one who treasures up past injuries is poisoning his own soul—the very deadliest form of autotoxemia.

Let's forget it. Take heed of the past only that we may not make the same errors again.

There is just one day that is our very own, and that is today. Into this day let us crowd its full share of work and of play, of good and pleasure enjoyed. Now only do we live. The past is dead. Let not its shroud trail over the banquet table. Bury your dead, God rest their souls. We are sore at heart over their loss but all the more reason to cherish and enjoy the living. The gospel of the day is work and play. Work with all the strength that endows your arm. Sixty years is the life of a man. Twenty years pass before he has found himself. Ten more in preparing for his life work. Twenty years he has left in which to justify his progenitors for his

production, in which to push the old world along a bit, to make it wiser, better, happier for his having been. Twenty years to develop a business, build a home and rear a family. Twenty years to earn the right to peace and plenty in what is left. One-third of his time passes in sleep, a few hours more in recreation. Not half the day in work; yet that small modicum must furnish support for present and future. Work while the sun shines; work with your might, with your muscle and brain; work your best; work to win. Tomorrow is pregnant with possibilities for good and ill. It is a double—behind stands the lady and lurks the tiger. We hold the key in our hands. On our ability to choose correctly depends our future. We dream of this tomorrow; but there are dreams—and dreams. The waking depicts an ideal, toward which our efforts may tend. The ideal today is something higher, better, fairer than has yet been reached, but in the vista of tomorrows lengthening into obscurity it may be embodied into reality. All human progress is due to such dreamers. Dream—but while working and making. Do not postpone either work or play till tomorrow. Work first, earn your play, but never forget that tomorrow has also its work. The man who leaves work for tomorrow is a drone; he who postpones his enjoyment for tomorrow is a dullard, a plodder, engrossed in work, he forgets how to enjoy life, and wake up at last to that appalling fact, when work, too, palls on him before the sickening query: For what? The faculty of enjoying life is the most precious of human possessions. It is one to be studied and developed. The truest forms are to be recognized, that we waste not precious time on false quests.

What brings the future? Fruitful is its promise. The earth is yet dead, but underneath the seeds lie warm and safe, ready to burst into vigorous life at the touch of sun and of spring. Richer by the varied experiences of the past, stronger with the consciousness of right, sustained by the sense of duty,

secure in the love of those who know us, we face with equanimity, whatever the future may bring. Is it to be losses? The man remains. Sickness and suffering? The soul is eternal. Death—frees the soul and solves all questions at last. Let come what must, we must keep our hearts free from evil wishes toward our kind, and the rest doesn't matter. Little it imports what becomes of us—the truths we inculate matter infinitely, for they make for the advance of humanity, for the relief of at least a little of the human suffering, and the prolongation of precious human lives.

Let us, then, covenant together, for the future, to live without anger, avarice, pettiness, littleness. Resolve to be generous, liberal, kind, to recognize the expreme value of eternal life, and strive by every means to roll back the tide of death; to do something to shape the million-handed labor to an end and outcome that will leave more sunshine and more flowers to mankind. Let your labor be so ordered that in future times the loved ones may dwell longer with those who love them; open your minds; exalt your souls; widen the sympathies of your hearts; face the things that are now as you will face the reality of death—fearless and alone. Remember that the battle of life cannot be fought by another. "God helps those who helps themselves."

Don't sit 'round with hangin' lip,
  That is sure to floor you;
Try to get a better grip
  On the work before you.
Put some ginger in your words
  When you meet a neighbor.
Throw your trouble to the birds,
  Get right down to labor;
An' you'll notice every day
  Things are comin' right your way—ANON.

THE IMPORTANCE OF CHEMISTRY AND PHYSIOLOGY TO THE GENERAL PRACTITIONER.

ROBT. H. LAFFERTY, CHARLOTTE.

If the science of medicine were a four-legged table two of these legs would be chemistry and physiology. I frequently compare the medical student to the watchmaker learning his trade. In anatomy he is learning the shapes and forms of the different parts by themselves and their relation. In chemistry he is learning of what the different parts are made and with what to repair the worn parts, and in physiology he is studying the running watch, and the relation of one part or organ to the other in function and action. What the other leg of this table is I leave to you to decide.

No one will deny the fact that these two branches are of infinite value to the medical student, but the practitioner seems to have the idea that he is through with them whenever he passes the board. This is not true, and I wish to mention a few important cases.

First in regard to chemistry: I shall not mention its extreme importance in urine analysis, stomach analysis, drug formation and assaying, in the various serum tests and biochemical reactions. For everyone who lays any claim to accurate diagnosis and treatment must acknowledge his debt to these tests although I regret that few practitioners do these tests with anything like scientific accuracy but they work more like a cook in the kitchen with her cook-book.

But in the field of metabolism is the place where chemistry gets in her best licks for the doctor. Here is a wonderful machine, it requires such and such fuel and such and such quantities of this fuel to make it run to its best advantage, it requires such and such materials to replace the worn parts

and supply the waste. Now I ask in all candor would you employ a machinist who knew nothing of the fuels and fuel values and nothing of the things needed to replace the wear and tear of a fine machine that you possessed?

We are the machinists who are to keep in repair this, the most wonderful of all machines, and can you blame a man for sending for the doctor who knows the needs of the machine?

We sometimes smile when we hear a man diagnose a trouble as "faulty metabolism," but when we come to the last analysis this is practically correct in every case. In fact in all disease, metabolism is at fault in some phase.

The time is past for the treatment of constipation with drugs, for the starvation of our patients in the fevers, for the neglect of the diet of our patients in any disease, for the indefinite reply of "Eat what you want" to the patient who asks you what to eat. It is the doctor's duty to study the caloric requirements of every patient in every disease, to write a diet list that meets these requirements, and to see that the patient gets it, just as much as it is his duty to prescribe medicine, and we might add that a good deal less medicine will be needed if the proper diet is given.

It is the physician's duty to know the use, value and composition of each class of foodstuffs. When one sees the foods that are allowed some patients he is reminded of a machinist who would use beefsteak as fuel for a furnace, or, a piece of oak plank for repairing a burnt out lining, or even when the right kind of foods are prescribed as Dr. Manning will show in his able paper the quantity is not sufficient.

I might speak much longer on the chemistry of metabolism and its importance to the practitioner, but we have not the time so we pass on to the notice of the importance of physiology.

We will not dwell further on the physiological processes that so largely involve chemistry. I will call your attention again to Dr. Manning's remarks on the digestive processes and metabolism.

Next I will mention the hardest part of all physiology, that of the nervous system. Without the knowledge of the physiology, of this the governing and co-ordinating part of this great machine, the practitioner is often sadly handicapped and misses some of the most important diagnostic signs. As an example of this I shall have to call attention to Dr. Peeler's paper which illustrates the importance of this kind of knowledge.

One very important physiological asset and one that is generally wofully neglected by us is the blood pressure. So important do I consider this and so much neglected is this field of diagnosis that I prevailed upon Dr. Wright to give us a paper on it, and I asked him not to try to bring forth all of the many hypotheses and the theories in regard to it, but simply to set forth some of the important facts that would be useful to the general practitioners.

There is no excuse for the practitioners to neglect this now that we have so many instruments that are accurate and easily portable. So important do we consider this instrument in the North Carolina Medical College dispensary that we would as lief allow a patient to pass through without a physical examination or urinalysis, as without determining his blood pressure.

Now there remains for us to notice the importance of pathological physiology, which is of course the part of physiology that most concerns the doctor and certainly one must know the normal before he could recognize the abnormal. We might mention here immunity which is a physiological process the various serum reaction both in diagnosis and treatment which we may place in the realm of physiology and physiological chemistry, and of course all physical diagnosis which

presupposes the thorough knowledge of the normal organs in action before the abnormal one can be studied. In this connection I would like to call your attention to the paper of Dr. Brenizer in the section in pathology as an instance where the knowledge of pathological physiology aided in an obscure diagnosis and some remarkable cures.

Show me the doctor who knows his physiology and chemistry and tries to keep up on them. Show me the practitioner who uses this knowledge and I will show you the intelligent practitioner, the accurate diagnostician, and of course the doctor who will get and hold his practice.

FUNDAMENTAL PRINCIPLES OF DIETETICS.

I. Manning, Chapel Hill.

Idiosyncrasy, natural or acquired, real or imaginary, temporary or permanent, is so often the determining factor in the arrangement of a diet we are apt to think that the only principle of dietetics is to find something that the patient can and will eat. With the feeling that one kind of food is as apt to succeed as another we run through the available list and with many of our patients finally resort to starvation or its equivalent. The advances in our knowledge of the physiology of digestion and metabolism have, however, furnished more accurate information of the physiological action and nutritive value of the various foods and the data for a more rational system of dietetics.

From a true idiosyncrasy there is no escape, but I believe we mistake very often a fancy of the appetite for a real idiosyncrasy. The importance of a well regulated appetite as an aid to digestion has been recognized from time immemorial and we have the rational explanation in the fact that the appetite stimulates the flow of gastric juice and to some extent of the pancreatic juice. We are told moreover that this so-called appetite juice initiates the processes of digestion in the stomach and by its action on the foods produces certain chemical substances which still further stimulate the gastric glands, and thus the flow of gastric juice continues to the end of gastric digestion and is adjusted to the quality and quantity of food. Therefore one of the fundamental principles of dietetics is to appeal to the appetite, to select the foods most agreeable to the patient, to serve them in the most palatable forms,—in short to let the patient arrange and order his or her own diet. We know, however, that the appetite is psychic,

is neither a reflex from the stomach nor a true expression of hunger, often exceeds the digestive and assimilative capacity of the individual, is fitful, capricious, and often absent altogether. Fortunately it is not essential to efficient digestion, nor should it be allowed to dictate the diet to the exclusion of more important considerations.

Errors of appetite, nevertheless, cannot escape some consideration in practical dietetics. For an excess of appetite per se we are seldom consulted, but we are consulted for its consequences, viz.: obesity, gout and allied conditions, and various forms of indigestion. I believe it futile to suggest to these patients to eat less, but I am confident if we can persuade them to chew the food a long time we will accomplish much. I am aware that Fletcherism has been the subject of some ridicule both by the profession and the laity, but I believe some at least of his dietetic principles are fundamentally sound. Prolonged chewing, which is one of them, not only accomplishes the thorough trituration of the foods but also restrains the appetite,—the object to be desired. A loss of appetite, though unusually secondary and at times a fortunate circumstance, is often a serious obstacle in dietetics. In the obstinate and persistent forms of anorexia we should remember that digestion may be performed in an entirely efficient manner. The chemical substances which are produced by the action of the appetite juice and which are of more importance in normal digestion than the appetite juice itself, may be given as foods. Beef extract, animal broths, and the like are especially valuable for this purpose. Pawlaw in a very interesting series of experiments demonstrated the value of such agents and at the same time and of equal importance the fact that egg albumin and bread, two very common articles prescribed in these conditions, are without effect. Therefore by the addition of beef juice, or beef extract, or animal broths to the diet

we should be able to compensate in a measure for the loss of appetite.

The dietetic management of stomachic disturbances presents more serious difficulties, and yet I believe we have a very accurate knowledge of the physiology of gastric digestion and therefore the theoretical indications should be reasonably clear and definite. The most essential factor in normal gastric digestion is an adequate amount of hydrochloric acid. Hydrochloric acid is not only necessary for the action of pepsin (which I believe is rarely deficient), but has the more important action of stimulating the movements of the stomach, of regulating the opening and closing of the pyloric orifice, and exciting the flow of the intestinal juices, viz.: bile, succus and entericus, and pancreatic juice. Hydrochloric acid, therefore, controls the duration of stomach digestion, prevents fermentation, and preserves the functions of the stomach as an automatic reservoir, thus preventing the flooding of the intestines and securing to them the conditions favorable to normal digestion.

"The presence of a normal amount of hydrochloric acid," says Boas, "speaks against any serious textile disease of the stomach, or against the presence of any stomach disease at all." With the exception of certain types of neurosis gastric disturbances are associated with, if not due to, alterations in the amount of hydrochloric acid, and perhaps the same may be said of many cases of intestinal indigestion. The two possible alterations in the amount of hydrochloric acid are a decrease, a hypochlorhydria, or an increase, a hyperchlorhydria. In the former the dietetic indications are obviously to prescribe those foods that will stimulate the flow of gastric juice (beef juice, animal broths, etc.), and at the same time foods that require the least amount of hydrochloric acid for their acidification, for it is free acid that is the effective agent; in the latter (hyperchlorhydria), such foods as will inhibit the secretion or

tend to combine with or neutralize the free acid. In this connection Cannon has demonstrated that the carbohydrates require less acid for their acidification than the proteins and therefore stay in the stomach for a shorter time, and Pawlaw proved that the fats inhibit the flow of gastric juice and accordingly delay stomach digestion. In hypochlorhydria, which is usually associated with delayed stomach digestion, the diet should consist essentially of beef juice, or extract and the carbohydrates; while in hyperchlohydria which is usually associated with a shortened gastric digestion, it should consist of fats and proteins.

While our knowledge of the physiology of intestinal digestion is reasonably complete, our knowledge of the pathology of the various forms of intestinal indigestion is far from what it should be. We know the action and importance of the pancreatic juice and succus entericus, but we do not know to what extent and how they vary from the normal. We know that bile dissolves fats and aids in their absorption, stimulates intestinal peristalsis and restrains bacterial action and favors normal intestinal digestion; in its absence we have constipation, excess of acid and gas in the intestinal contents, and much unabsorbed fat and the products of putrefactive decomposition in the feces. In the common types of intestinal indigestion our chief concern is with conditions which in normal digestion the bile seems to prevent, but we do not know that the secretion of bile is at fault in a large number of cases. Abnormal peristalsis and excessive bacterial action are the two common abnormalities of intestinal digestion. It is unfortunate that we do not know more of the conditions that control intestinal movements. We know that the presence of bile is an important factor, but so far as I am aware the secretion of bile is not susceptible to dietetic management; acids and gases in the intestinal contents will stimulate peristalsis, but they are products of bacterial action and border on the

pathological. But at present mechanical irritation is the most important factor so far as dietetic indications are concerned; in constipation the diet must contain a large proportion of indigestible matter, especially the woody parts of vegetable matter, and in diarrhoea such substances must be excluded. I hope, however, the last word has not been spoken on this phase of dietetics. Where we have to deal with excessive bacterial action we should remember that in a general way the carbohydrates, especially the more easily fermentable sugars (milk, sugar, and the like, yield gas, while the proteins yield substances which have a more serious effect and are largely responsible for the intestinal toxæmias. It is unfortunate that we are unable to lay down more definite rules for guidance in intestinal indigestion.

Recent experimental work has added greatly to our knowledge of metabolism. We have learned much of the chemical changes that the foods undergo after absorption from the alimentary canal, of the end products which represent them in the excretions, of the role of the internal secretions and the functions of the ductless glands, but we are unable to interpret them in terms of practical dietetics. We do not know the mechanism by which metabolism as a whole is controlled, why the thin person should remain thin despite a liberal diet and a good digestion, nor how to circumvent those errors of metabolism which lead to or follow upon various pathological conditions. There is much yet to be done, but the signs are encouraging. At least the quantitative principle in dietetics has been introduced. The sensitive calorimeter of Atwater and Benedict has furnished very accurate data as to the amount of food metabolized under a limited number of conditions, and while their deductions agree in the main with those older observations of Voit and others, they have given us greater confidence and we feel that this phase of dietetics is on a more scientific basis. I feel that the value of the quan-

titative principle has not been sufficiently emphasized in our text-books of clinical medicine; they are singularly silent on the nutritive value of even the common articles of diet in the quantities ordinarily prescribed and are content with indefinite generalizations, and we are constantly puzzled as to whether our patient is getting sufficient food to nourish him.

There is a general agreement among all observers that a man weighing approximately 150 pounds, at rest, requires 2,000 calories or heat-units for the maintenance of body equilibrium. This is approximately equivalent to 13 calories per pound, or 83 C. per hour. The following table published by Atwater and Benedict will indicate the food requirements under several conditions:

Man sleeping	65 calories per hour.
Man sitting at rest	120 calories per hour.
Man at light muscular exercise	170 calories per hour.
Man at active muscular exercise	290 calories per hour.
Man at severe muscular exercise	450 calories per hour.
Man at a very severe muscular exercise	600 calories per hr.

This table will illustrate a fundamental principle in dietetics, i e., that the amount of food required depends in large part upon the amount of muscular exercise. There is no fact of dietetics more thoroughly established than the fact that if the income is less than the outgo, if the equivalent of food metabolized is greater than the foods digested and assimilated, the individual will lose in weight. The successful treatment of obesity and perhaps certain forms of excrementitious plethora will depend upon the conscientious application of this principle. I think one may say dogmatically that less food and more active muscular exercise will reduce flesh, but we want to be sure that there is actually less food.

The amount of food required is increased in fevers and toxic condition with or without fever. I regret that I have

been unable to find any account of experiments performed on febrile patients and therefore haven't at hand any accurate data as to the amount of increase. In some animal experiments an increase of the body temperature to approximately 104 F. has seemed to increase the amount of metabolism by 40%. We should remember, however, that the assimilative capacity of febrile patients is reduced and it is practically impossible to maintain the nutrition in a state of equilibrium.

Assuming the correctness of the observation that a man at rest or engaged in the light work of an office or in some sedentary occupation requires a minimum of 2,000 calories, and that our patients confined to bed or convalescing do not require less, but rather more, let us see how the diets ordinarily prescribed in such conditions meet the requirement.

Milk which is perhaps the standard diet has the heat value or nutritive value of 314 C. per pound. The ordinary drinking glass 3 1-2 inches deep and 2 1-2 inches in diameter, will hold nine ounces; the heat value of a glass of milk is therefore about 175 calories. A glass of whole milk every four hours, or six times in the 24 hours, will contain a fraction over 1,000 C., or about half the actual food requirement. The same quantity of buttermilk will yield 567 C. or a little over one-fourth of the required amount.

Eggs. The white of an average egg will weigh about one ounce. The heat value of a pound of raw eggs is 672 C. Assuming that the white and yolk are of equal value the white of one egg has the heat value of 42 C. If we prescribe the white of one egg every two hours the total fuel value is a fraction over 500 C., or about one-fourth of actual food requirement. The total weight of the whole egg (yolk and white), is about one and one-half ounces and has the heat value of 63 C. One whole egg added to one glass of whole milk has the heat value of approximately 200 C.

Soup. A teacup of home-made chicken soup has the heat value of 60 C.; thickened with a half-ounce of rice it would have the heat value of 110 C.

Suppose we are giving our patient 6 glasses of whole milk and 6 teacups of chicken soup, thickened with rice in the 24 hours (and this is regarded as a fairly liberal diet), its total heat value is slightly over 1,200 C., or about three-fifths of the actual requirement.

Oatmeal which is one of the most nutritious of the cereals has the heat value of 1811 C. per pound. A liberal saucer of oatmeal without additions has the heat value of about 100 C., with the addition of 2 oz. of cream, one-half of a one inch cube of butter, and two teaspoonsful of sugar has the heat value of about 400 C. Strained oatmeal gruel will scarcely have the value of 50 C. per teacupful.

These few items selected from the common dietary of the sick room will serve to illustrate the quantitative principle in dietetics and its significance. For further information concerning the food values of various other articles of diet I suggest as a convenient and at the same time thoroughly reliable book: Sherman's, "The Chemistry of Food and Nutrition," published by the McMillan Company.

I am thoroughly conscious of the fact that in many cases we cannot prescribe sufficient food to meet the actual requirements, but we should no longer labor under dietetic delusions and presume the patient to be getting adequate nourishment when as a matter of fact he is close upon starvation. I am quite certain that every practicing physician has his own sick room dietary; it would be a simple matter for him to tabulate the different articles most commonly used and the heat value of each in the quantities usually prescribed; and I am quite sure he would find such a table of real value and take more interest in the subject of dietetics.

SOME REMARKS ON CERVICAL LACERATIONS.

G. M. Cooper, Clinton.

I wish to state in the beginning of these remarks that I am not posing as a surgeon or a specialist on diseases of women. I simply wish to speak from the standpoint of an average country physician.

I am not going to undertake an elaborate discussion of the subject. I only wish to emphasize some questions of importance, and especially as regards the effects and results of those cases which go on for a long time without surgical treatment.

For a systematic description of cervical lacerations, including etiology, pathology, symptoms, etc., I respectfully refer you to any good text-book on gynecology.

Dudley says that "The credit of having established the pathological significance and surgical treatment of laceration of the cervix uteri belongs to Emmett. His three original communications not only contained the first practical information on the subject, but, what is more remarkable when we consider the great frequency and the far-reaching pathological results of the lesion, the information which they contained was at once so complete, so accurate, and so adequate that little if anything of importance has since been added." And as Dudley says some of Emmett's first published papers on the subject nearly forty years ago remain a wonderfully graphic picture of conditions as they exist in practice today.

It is a well known fact that only a small per cent of women in the rural districts have medical attendance at normal labor. And the consequences are that in a great many instances they suffer serious lacerations which are never found or at least not until serious results have taken place. Those of you who practice in the country or in the small towns will appreciate

the truth of that statement. I am not speaking of the well-to-do country people, who have most of the advantages of modern life and are always careful to secure the best medical services for themselves, but I mean the small farmer and tenant class, who often live away out miles from town or a physician, to whom a doctor's fee for obstetrical attendance seems almost prohibitive. They are therefore, in many cases a prey to the ignorance, the incompetence, and uncleanliness of the midwife. Their condition is often pathetic in the extreme. The long-standing laceration predisposes to prolapse, infection of the cervix, endometritis, subinvolution, leucorrhoea, difficult menstruation, pain in the entire pelvic region and a thousand nervous and mental symptoms, too numerous to mention, to say nothing of the one great common danger to every woman with an eroded lacerated cervix, viz., cancer.

The one point I wish to impress in these few remarks is the importance of a careful vaginal examination through a speculum of every woman who is suspected of having a cervical laceration. And then when we find a laceration giving trouble (sometimes the slight laceration gives rise to much severer derangements than the extensive tear), it is our duty to advise and to insist on a capable surgeon being at once called upon to operate. The operation is apparently simple to a man of quick touch and sound surgical judgment. As I said in the beginning I am not a surgeon and have no ambition to become one, but I have been associated in practice for the past seven years with a man who does a great deal of this sort of work and I have never yet seen one of these patients fail to improve quickly and permanently. It is every bit as big a fraud to apply caustics and trust to douches for the cure of a lacerated cervix with erosions as the barbarous custom of dropping a flaxseed into a patient's eye for the removal of a cinder.

They will not always take our advice, but that should not deter us from an honest performance of our duty. The average family in the country is more afraid of the word operation than of pestilence. And I am sorry to say that in a great many instances they have reason to be. For it generally means a trip to a hospital, and after railroad fare, the ambulance fee, the anaesthetist's account, the pathologist's five dollars, the surgeon's bill, the regular hospital charges and pay for a few special nurses is all settled, the account in four or five weeks amounts higher than the average income of the small farmer for a year. But in an operation for laceration of the cervix uteri there need be no hospital charges, though of course any operation is best done in a hospital. It can be performed at the woman's own home and where there are reasons to the contrary it may be done even without a general anaesthetic, and so it may be considered an absolutely safe operation, and one which is sure to benefit the patient. I have seen a few of these patients who refused to undergo operative treatment go on into hopeless invalidism after running the gamut of all the patent medicine frauds, and at least two or three of them have passed on to the insane asylum, reason gone, home broken up and otherwise useful lives wrecked.

And now in conclusion I wish to pass on a few observations as to general considerations.

1st. We need more good physicians at the country cross roads and fewer of us in the cities and towns. It would be tough on the cross roads fellow but it would be a relief from suffering to many a woman.

2d. All of us should be patient at all times and under all circumstances when called to attend a woman in labor. Other things favorable we should not be sparing in the use of chloroform. We should discourage meddlesome interference, but at the same time we should be always ready to take action when necessary.

3d. We should have a hospital at every county seat in the State, free to the people who could not otherwise pay for hospital services, with a competent county health officer in charge, capable of doing microscopical work for all the physicians of his county.

4th. We must have better trained physicians, and to get them we must have a more rigid entrance requirement and a higher standard of excellence in our medical schools. It would deter no poor boy who has a real ambition to become a doctor of medicine. And just here let me say that I believe that the small college is the best place to train a man in medicine as well as in any other profession. Let him finish and specialize at the great universities but first give him a personal, practical, groundwork and instill into him the ideals of our great profession, and this you cannot do in the big college, Dr. Abraham Flexner and the Hon. Henry S. Pritchett to the contrary notwithstanding.

I notice in the March issue of the American Medical Association Bulletin that the president of Tulane University quoting Carnegie's famous "Millionaire's Bulletin Number Four," advises that there be only five medical schools in the entire South, one of course to be Tulane, leaving North and South Carolina entirely out of the problem, to humbly have their sons educated elsewhere.

Now if you will consult the 1910 United States Census report, you will find that by making Raleigh, N. C., the centre of one circle and New Orleans the centre of another, each having a radius of sixty miles, you will find the greater population living in the Raleigh circle.

5th. The next legislature should pass a law providing for the training and registration of each and every woman, white and black, who is engaged in the practice of midwifery. And I believe that the best and most practical plan which could be put into action at once, would be to have them licensed by a

regular examining board of say, three physicians in each county one of whom should be the county superintendent of health and the other two to be elected, say every two years by the regular county medical society. Let each county have a whole-time health officer and charge him directly with the control and regulation of the midwife practice in his county, in other words let the health officer be responsible for the enforcement of the law. And let no woman follow the vocation of midwife who has not been taught something of the theory of the mechanism of labor, and considerable of the principles of asepsis. Have also a complete vital statistics act which shall compel a strict and prompt report of all births by medical or midwife attendant.

If these things were done the condition of many a woman, especially of the poorer classes would be bettered and life made more attractive.

THE NERVOUS PHENOMENA OF PELVIC DISEASES

W. H. Smith, Goldsboro.

In the course of four years' practice in the country, where chronic pelvic disease was rife, I was astounded to see the different manifestations by the nervous system and, in searching for literature on the subject, I was surprised that so little had been written on this everyday subject. I therefore selected this subject for a paper with a hope that it would provoke discussion and enlighten us as to their nature, cause and treatment.

To the physician who sees many cases of pelvic disease there are times when he is puzzled as to whether the patient is afflicted with some other disease or whether the pelvic condition is the sole trouble—as witness this bizarre group of nervous phenomena as reported by Vidoni. His patient at the menstrual period was attacked frequently as follows: Loss of consciousness, sterterous breathing and signs of acute edema of the lungs. After twenty minutes the seizure subsided with the expectoration of large quantities of blood-stained serous sputum and with the patient delirious. The delirium subsided usually in twenty-four hours and the patient was well but weak. This, Vidoni cites as a case of pelvic viceral epilepsy, and says that it occurs and that it is analagous to epilepsy of psychic origin. In considering the manifestations of pelvic diseases, one is stuck with the predilection that pelvic disease has for the nervous system. Another case in which an unusual manifestation occurred was observed personally. The patient, during the two years observation twice suffered a seemingly partial hemiphlegia. It was accompanied both times by an increase of pain and tenderness

in the iliacfossa of the same side which was the seat of a chronic pelvic condition.

Probably the most constant nervous manifestation of pelvic disease is pain and it is the one that brings the vast majority of sufferers to the physician. It is usually situated in the ovarian regions but may be referred to the knee from involvement of the anterior crural nerve or it may be down the anterior aspect of the thighs, again it may be referred along the course of any of the nerves that lie in the pelvis. Among the more distantly situated organs or portions of the body where pain from pelvic disease is felt may be mentioned the occiput and vertex of the head, also the breasts, the latter being the site usually selected by pains that are felt at the menstrual period. Backache is of constant occurence with retro-displacements and also frequently of other disorders. Pain itself in chronic pelvic disease has very little place in diagnostic consideration, unless one of the contiguous nerves is involved and even then it is difficult to locate the lesion. Sometimes the character and situation being the same for different disorders. Among the acute inflammations pain is of real value diagnostically, its character and situation often times aiding in the localization of and determining the lesion. The other nervous phenomena of chronic pelvic disease are manifold and also diagnostically useless. Some of the more unusual ones are asthma, which occurs usually at the menstrual period, and if long continued it may develop into true asthma and become permanent. Another respiratory affection but of less frequent occurence is coryza. Vertigo, with and without scotoma, is also sometimes seen. Nausea and vomiting are of less frequent occurrence, but have more diagnostic value as being indicative of ovarian disease. Paralysis of the nerves supplying the thighs and legs is usually seen in subjects suffering from tumors and are due to the pressure. Paræsthesia usually accompanies or precedes the paralysis.

The nerve involvement may also be due to the nerves being included in the inflammatory condition, but involvement of these nerves, especially the anterior crural, usually causes referred pains in the knee, as has been mentioned. Of unusual occurrence are the hysterial joints that sometimes accompany pelvic trouble. As a guide in diagnosis of this condition, Sir James Paget says: "A joint that is cold by day and hot by night is not an inflamed joint." Reflex digestive disturbances having their origin in pelvic disease are among the most frequent reflex nervous manifestation seen. They may be of the gastric type, or of the intestinal type, when of the latter type it frequently leads to a state of intestinal toxemia. A very interesting gastro-intestinal condition is the hysterical affection of wind sucking. At this point it will not be amiss to caution the profession against mistaking pellagra with gynecological involvement for a case of primary gynecological disease attended with gastro-intestinal and nervous disturbances. Patients have been operated on for gynecological disease when the gynecological disease was only a part of the pellagrous affection. These cases are conducive to post operative insanity. They are separate and distinct conditions but at times closely resemble each other in the symptom complex. For further information showing the close relationship of these conditions see Dr. Guerry's paper read before the Southern Surgical and Gynecological Congress in 1909. Other hysterical affections are frequently seen, especially in cases that have an unstable nervous system. Besides hysteria, neurasthenia and the graver forms of mental disease need to be considered very thoroughly in the treatment of pelvic lesions. In fact, all nervous manifestations should be considered more thoroughly than they are. General practitioners in dealing with this class of cases usually consider the pelvic condition as the chief malady and pay little or no attention to the

nervous condition, believing that it is more of an effect than of a distinct condition or as a cause.

Dr. Stewart McGuire, in his address before the Southern Surgical and Gynecological Association in 1909, calls attention to the importance of studying the nervous make-up of gynecological patients, especially those in whom operation is considered. He says: "In endeavoring to forecast the final results of an operation the nervous and mental condition of the patient must be carefully considered." To those of us who treat these cases in a medical way I would change it and say in endeavoring to outline the treatment that the mental and nervous condition of the patients to the operating table when Christian Science and hygienic measures are nearer the right treatment. They need doctoring temperamentally more than surgically. By using Freuds Physico analysis and finding out the mental state, by inquiring into her home life and finding out if she has proper diet, and the proper amount of rest, and if these conditions are not what they should be, correcting them will do more good so far as her general condition is concerned than an operation. In a most interesting paper on Interpretation of Pain and the Dysesthesias, Dana also calls attention to the need of studying the nervous system of patients and especially the individual's susceptibility to pain. There are patients in whom pain and its accompanying phenomena are the cause and not the effect of the pelvic condition. These pains Dana speaks of as "Attention pains." There is another class of patients, and I believe these are in the majority who have a slight pelvic lesion but on account of the unstable condition of their nervous make-up it is magnified a hundred fold. In explanation a very good modus operandi is offered by Dana in the article referred to. He says that when the nervous condition is at par or above the impulses received from the small pathologic condition are not

interpreted the same nor are they recognized by the conscious ego, but when there is a subnormal condition of the nervous system these impulses are recognized and interpreted as pains. I think the other manifestations by the nervous system seen in pelvic conditions can be explained along the same lines. As we know, the brain exerts an inhibitory action on the spinal cord. Also that the spinal cord lodges the direct control of practically all functions. Therefore, when the higher centers are in a subnormal or abnormal condition this inhibitory control is diminished or lost and the spinal cord centers run wild, giving the most unusual and almost inexplainable nervous derangements so frequently seen. The loss of tone of the brain may be brought about by anxiety, domestic, financial or other mental morbid states, or may be a part of a general subnormal condition which may be caused by over-work, improper food, exposure or some disease. By finding out these conditions and remedying them the practical applicability of studying the nervous status is readily understood. In a patient who has a lowered condition of the nervous system the pelvic condition may be either the effect or a condition of minor consideration of the general condition. If the effect, it would be as the result of attention pains acting through the sympathetic system, causing a passive congestion with its attendant changes. In a case of this character, it is clearly seen that an operation is not called for, but the treatment is purely suggestive with hygienic and tonic measures for the upbuilding of the nervous and general conditions. In a case where there is a slight pelvic condition with a lowered nervous condition our aim in treatment also should be in a non-operative direction. The treatment as I have just mentioned should be in a non-operative direction and directed toward carrying the general health above par, thereby increasing the inhibitory function of the higher centers and not by

lowering the stimulatory action of the spinal cord. In other words, bring about the normal relations between these two systems. In some cases where the nervous manifestations are violent, a nerve sedative in the beginning is advisable, but its use should be discontinued as soon as possible.

THE INFLUENCE OF HABIT IN THE CAUSE OF DISEASE AND THE NECESSITY OF DISCIPLINE IN ITS CURE.

H. D. STEWART, MONROE.

Mr. President, and Members of the North Carolina Medical Association:

In searching for the cause of disease, I may say that the predisposing factor in the cause of all disease is the habits of the individual affected or of some foreparent.

The curse of disease has not been placed upon any individual by divine providence.

Man is distinctly a free moral agent not only in regard to his choice of right or of wrong, but also with reference to his choice of health or of disease. He may obey the laws of God or of nature and be free from disease, or he may have no regard for the laws of health and disease will be the consequence.

Man's habits expose and predispose him to disease in three ways: 1st, *Habits of person or habits of body.*

If he associates with lewd women, he may contract syphilis, gonorrhoea or chancroid. It is rare for him to get these diseases any other way but by his own habits of body, his own violations of social laws and health laws.

He may in a small percentage of cases get them innocently, as when a young lady kisses her syphilitic sweetheart and contracts syphilis of the lip or of the tongue, or a lowdown husband,—too low to be called a man,—may infect his pure innocent wife with gonorrhoea and kill her by pustubes or peritonitis. How terrible! He ought to be imprisoned for life for criminal negligence and criminal ignorance. In no case should he ever be allowed to have the opportunity to de-

ceive and destroy another good woman. He should be socially ostracized at once and his record and career should be known of all women.

Mothers and their marriageable daughters snould scrupulously avoid uncured gonorrhoeic or syphilitic young men.

Hereditary syphilis may be innocently acquired, but then the pre-disposing causal factor is found in the habits of the parent.

Gonorrhoea of the eyes, and especially of the eyes of the new-born may be acquired innocently.

Gonorrhoea of the generative organs may rarely be acquired from contact with a urinal stool on which the gonococci have been deposited.

There is a vast army of boys and young men infected with gonorrhea. Some through fear of detection and publicity undertake to treat their own cases. A presumptuous druggist who has more nerve than knowledge may take the case. The consequence is that many cases become chronic and the radical cure becomes a difficult matter. The germs have become thoroughly entrenched in the mucous folds of the urethra where they may remain many years, not as dead bacteria, but as foci of infection for all who may be exposed.

These infected young men, thinking they are cured, and even some who know they are not cured, are going to marry our pure innocent girls. What will be the consequence? The young wife will become infected. Sometimes she dies. Again an operation saves her life. Probably her constitution is undermined and that rugged constitution of her girl-hood days has been broken, and she is a semi-invalid for life. She has to be bundled up and shipped off to the hospital for urathitis, cystitis, pustubes, pus-kidney or peritonitis. Shame upon the man who has wrecked her natural life.

And the innocent babe whose little eyes have had to pass through the infected parturient tract is born with gonorrhea

of the eyes. If it happens to be in the care of a mid-wife or of an incompetent doctor, it may become blind and its usefulness and its capacity for life be largely hindered.

And these young fellows whose evil habits bring disease and death upon themselves and theirs are to be the husbands of our daughters and the fathers of the next generation. What hope have we in these for the next generation?

An individual may bring upon himself many diseases by disregard for natural laws and natural consequences. If he refuses vaccination he may get small-pox. If he visits smallpox, he is almost sure to get the disease, because the voluntary visitor to smallpox is almost always opposed to vaccination. The same ignorance and prejudice that caused him to visit smallpox will cause him to refuse vaccination.

Conditions at Home and on the Premises.

A second way in which man may contract diseases is by living in filth. He may, by maintaining unsanitary surroundings, furnish breeding places for numerous diseases.

If a member of the family has consumption and the patient and the others disregard such sound laws and regulations as have been promulgated for protection in these cases there will be a house infection and a family infection—The whole family may die of consumption and ignorance working together.

A man may have a regular typhoid farm in his backyard. If a householder maintains a stagnant pool or allows stagnant water to remain nearby without an application of petroleum oil every ten days, the penalty of his negligence will be malaria to himself and his neighbors.

The light is being turned on with wonderful power in regard to the cause and prevention of disease. A great educational campaign is being waged to teach people how to live.

The day is not far distant when the family physician will be employed by the year to keep the family well and to teach

them how to avoid disease. The doctor must eventually become a teacher, a preacher and a physician.

He must teach men how to cultivate such habits as will conduce to health and happiness. He cannot teach them how to avoid the consequences of bad habits. His only service then will be to try to repair the damages, and to save the body from ultimate destruction and dissolution.

The family physician must drill into his people how to make and how to keep a sanitary home, sanitary premises and a sanitary body.

The most perfect man regardless of moral stamina, intellectual endowment and physical strength is he who is master of himself. I might name a few of the symptomatic diseases that are caused by syphilis, illustrating the fruits of individual habits: Locomotar Ataxia, insanity, paralysis, cirrhosis of the liver, Bright's disease, iritis, blindness, mental imbecility, rheumatism, deafness and sometimes infantile paralysis in adults may come from venereal diseases.

A third way in which an individual habituates himself to disease, so to speak, is by his eating and drinking.

The man who deliberately drinks alcoholics from day to day voluntarily brings upon himself cirrhosis of the kidney or other forms of Bright's disease, cirrhosis of the liver, cirrhosis of the lungs, cerebral softening, apoplexy or paralysis, fatty degeneration or infiltration of the heart, chronic gastritis, and various degenerative changes of nerve or muscle tissue. He kills himself slowly, but surely by the habit of drinking.

The habitual gormandizer, the fellow who eats indiscriminately of carbohydrates or of nitrogenous foods is even more sure to kill himself than the drunkard.

The glutton's days are numbered. You can estimate when he will die and what the cause will be. Many a man works

himself to death without ever striking a lick in the field of industry or commerce.

It is more exhausting to the heart, glands, brain and nerve centers to dispose of the contents of an overloaded stomach than it is to dispose of a heavy day of manual labor. A full belly is the mother of all evils. The stomach in distress from over distension and overburdening may end it all in heart failure, paralysis, apoplexy, or it may conduce to epileptic seizures, to fits of insanity, to explosions of mind, to vertigo, and the balance to a train of long evils.

The man who eats too much incapacitates himself for any useful performance, until the excess is disposed of. The fellow who habitually fills himself with a variety of animal foods is just as dangerous to his community and state as the drunkard. His very gluttony will conduce to the commitment of crimes, to disregard for social, economic and civil laws and to the reproduction of an enfeebled race of criminals, epileptics, insane, mental defectives, etc.

Review the history of certain families and see if I am not right.

A teased and tortured stomach means a poisoned brain, an ugly disposition, weakened courage, a lack of energy, hesitation and procrastination.

Why can't some preachers preach? Too much fried chicken, too much pie, too much salad, too much preserves and too much of everthing else the poor tired sister can think of in her bewilderment and delusion. No wonder some of them can't preach, they have all gone to stomach and animal instead of brain. When a preacher can't get his mind into a regular train of thought noted for sequence, unity and brevity, go back to his pantry and his dining table and diagnose his case.

Why can't some lawyers argue well their cases? Too much rye, too much appeasing of animal appetites, too much self satisfaction, and too little application to study.

They win one little case, and cane in hand, cigar in mouth, rest on their laurels for six months. The only emblem of wisdom some people ever have is a cigar in their mouth, cocked at an angle of forty-five degrees. Some have the beaver hat, some the Prince Albert coat. Some have the knit brow, the Websterian or Calhoun frown—their only emblem of wisdom. Some have the wise smile, the long hair, the head thrown backward, their thumbs in the armholes of the vest—all these—their only signs of distinction.

One day I went to see a young marrried lady who was determined not to die in debt to her stomach. Her mother, her paternal aunts, and some of her cousins had been great feeders. The lady complained of severe pain in her chest, with that characteristic spasmodic respiration that comes with irritation of the vagus nerve in acute indigestion.

Placing a finger on the chest at a point over the heart, I said, "You have a piece of fried chicken lodged just there!" She said, "How did you know I had been eating fried chicken?" I said, "The diagnosis is between fried chicken and ham, and the weight of evidence is in favor of fried chicken."

The diet at the average hotel is enough to kill a billy goat. Everthing drowned in sugar and grease. It is a wonder all the traveling men don't die before fifty of Bright's disease, cancer, apoplexy or heart disease.

The man who fills himself almost to the soft palate with a glutton's mess, is not able to do much effective work, moral, mental, or physical, until his congested brain blood vessels and glands shall have been relieved of the burden, and his system has been restored to its natural equilibrium.

Let the boa constrictor alone. He is joined unto his ox and he will be absolutely of no use to himself or any other being until that ox is digested and the poisonous excess eliminated.

Small prudent eaters have a greater capacity for work than those who habitually eat too much. They will render much

more valuable service in any line. A heavy eater is not usually a safe man. His brain is dazed, his courage fails him, he is asleep, he is easily overcome, he is living in the brute kingdom. He cannot become master of himself as long as the animal tendencies predominate in his life.

It would be surprising to know how much crime is committed under the influence of impulses and passions stimulated by things taken into the stomach.

Cocaine, morphine and alcohol and foods that poison the nerve centers all conduce to crime.

In the ignoble every good thing, every good impulse is made subservient to the baser desires and the baser instincts. A man's character as well as his capacity is largely affected by his diet.

There is angel's food, devil's food, the savage's food, food for the brain worker, food for the manual laborer, and food fit only for the gods. You can make or change a disposition with what you put into the stomach. It has been said "The nearest way to the heart is down the throat." Such an appeal. Such a pity that it is largely true.

The politician's appeal is to the ignorance and prejudice always, unless it be some who are ruled by policy instead of right.

He scarcely ever makes a direct appeal to the intelligent fair-minded public sentiment. His main object is to deceive his constituents, and to conceal anything that would injure himself.

The average young lady's appeal is to the young man's sense of beauty and his love of physical beauty.

In her appeal to the opposite sex, she places physical beauty first. She adorns herself and surroundings in such a way as to appeal to his animal instincts. Some add ragtime music and bouquets of flowers. Some feed him, and in this way appeal to his weaker self. It too often happens that a young lady

can rope in a young man with ragtime music. Sometimes a few boxes of chocolate bonbons will just render a girl helpless.

It is a part of the crime of many criminals, confidence men, procurers, seducers, robbers, gamblers, etc., to first ply the stomachs of their intended victims with food, drink or drugs. After stupefaction, then comes the commitment of crime. The criminal knows that certain things taken into the stomach, as foods, fountain drinks or candies will cause the unsuspecting victim to loose his bearings.

Don't sup with the unknown. Beware of the Greeks bearing gifts. If a man offers you something of value for nothing, avoid him, beware.

The Necessity of Discipline in the Cure of Disease.

Every man who has lived on the farm knows how worthless an undisciplined mule is. A three hundred dollar mule without discipline is worth nothing, unless discipline be possible at an early date. Every boy and every girl should be subject to authority. They are absolutely worthless without discipline and training. Everybody knows what a mess an uncontrolled child, boy or girl, is. They are hard to treat for disease.

In taking a new case of disease, the first thing a good physician or surgeon desires to know is the history of the case. What have been his habits? What is the probable diagnosis?

By elimination he brings the case down to some one of three to six diseases. By further work and study in physical examination, the use of the microscope, chemical tests and blood count, he concludes with the correct diagnosis.

The next test of his ability comes in his wise, careful management of the case. Can he control his patient? He thinks of the good hospital to receive his case. He desires the services of a good nurse to watch the case and to carry out his orders.

To secure good results, he must enforce discipline. He must make a good patient out of a probable bad one. The

doctor knows very well he cannot cure any serious disease in a patient whom he cannot control. It is necessary to keep the patient under strict observation.

One time I struggled with a patient three weeks trying to get enough nourishment into her to sustain her and enough medicine to check or modify the course of disease. After having become thoroughly disgusted and outdone, I finally gave it up, and so did she give up the ghost.

She said, "I will die and go to 'hell' before I will take any more." I said, "Well, you may die and go to 'hell', so far as I am concerned."

Without discipline and adherence to law and order, a physician is helpless in a severe dangerous disease.

Any disease can be cured in its early stages. But it takes early diagnosis, prompt treatment and subjection to authority on the part of the patient.

These auxiliaries must be had; absolute rest. An irritated, agitated, exhausted protoplasmic cell cannot restore and renew itself.

Reproduction and renewal of protoplasm requires periods of rest and unconscious rebuilding.

Second Aid to the Cure.

Nutrition. To resist, check or repair damage from disease the protoplasm must be well nourished.

An abundant healthy blood stream will throw off almost any disease.

Third—Oxygen. The pure air alone will check and cure many diseases, if a patient secures enough of it day and night.

Fourth—The patient must have an abundance of water inside and out. Water is a great prophylactic against disease. It is a life giver, a stimulant, a tonic.

The physician or surgeon must secure good elimination through the kidneys, the bowels, the skin and the lungs. The

functions of each of these organs must be carefully looked after.

So the physician or surgeon must diagnose promptly, treat promptly and wisely manage well his cases, and secure the adjuncts of rest, nourishment, oxygen, water and good elimination.

The morphine habitui or other drug fiend can be cured, but he must be confined or placed beyond the reach of these drugs until that mysterious something stored up in his system has all been eliminated. The tobacco habitui can be cured not by Notobac but by being placed out of reach of tobacco. The habitual drunkard can be cured, not by Keely, but by shutting him up, working him, and paying his wages to his family for two years for each offense.

In conclusion, I commend these thoughts to your careful consideration.

LAPAROHYSTEROTOMY

Dr. J. T. Burrus, High Point.

The spirit of our Guild in the discharge of duty should be the saving of lives. In no field of medicine has ignorance or negligence told in such forcible languages as in the field of obstetrics. Many mothers are resting today in our church yards because of ignorance or negligence. I wish to preface my text just here and state that every obstetritian should exercise the same rigid antiseptic measures as does the abdominal surgeon.

It is comforting to us to know that only rarely it becomes necessary to resort to Laparohysterotomy, but that there are cases (and perhaps more than we recognize), who should be subjected to such procedure is unquestioned by those of us who have practiced obstetrics a goodly number of years. Again I ask myself this question: Why do we see more Laparohysterotomies in the North than in the South? (That this is true, I am sure you will not question). Surely, it is not because our Southern women are larger in stature than the women of the North, or more capable of giving birth to their offsprings. By no means! My hypothesis is that our Northern physicians, living near large medical centers, have availed themselves of an opportunity and learned some of the niceties in diagnosing this condition and are acting bravely upon their judgment. Perhaps it is not amiss for us to study for a moment a bit of the history.

I once thought that Cæsar was delivered from his mother by the abdominal route, and because of this it took its name Cæsarian Section, but nowhere in history can I find this statement proven; on the contrary, the custom was before Cæsar's day. Early in the history of Rome there was an edict issued

prohibiting any mother from being entered without the child being delivered from her.

In accordance with this order a Roman peasant made a stab wound in the abdomen of his dying wife, accidently removing a living child.

In 1610 Troutman did the first Laparohysterotomy, which was unsuccessful. He did two more during his career as a practitioner of medicine, one of which was successful, saving both mother and child.

Again the Roman Catholic Church very much opposed embriotomy. So unpopular was it, with many who were willing and capable of doing embriotomy refused to do so because of the severe criticism which followed. The subject of Laparohysterotomy was practically abandoned until the advent of Antiseptic Surgery; since which time it has become very popular. Lusk says it is much less dangerous to the mother than embriotomy or symphsiotomy.

What are some of the indications of Laparohysterotomy?

First, I wish to ask that we review the measurements of the fetal head in all its dimensions. Also a visit to our text would help us to learn of the average dimensions of the inlet and outlet of the pelvis and the use of the pelvimeter; maternal or fetal distotia. Rechetic dwarfs, conjugate diameter 2½ inches to 3 inches. Flat contracted pelvis, carcinoma of the cervix pelvic tumors, and Stenosis of vagina. These are the principal causes which would lead to advise Laparohysterotomy. I know that in more cases than one I have labored diligently to deliver a child by the vaginal route and eventually succeeded when the smallest diameter of the child's head was much greater than the largest dimensions of the mother's true pelvis. The condition that my patient was left in goes without saying.

I remember on one occasion, I with three others, labored three hours to deliver a child and we succeeded, but we should

have advised and insisted on Laparohysterotomy. This case was in a patient very obesed and with a flattened pelvis. I do not believe the true conjugate would have measured over three inches. Never did the head engage, notwithstanding the os was completely dilated. We did a high fauceps and with all the force that could be brought to bear, resting each other in turn for this period, we delivered a dead child and separated the symphisis of the mother in the process.

Childs says that in every case where the head does not engage in the pelvis, if the head is presenting, it is a case for Laparohysterotomy because of too large a fetal head or too small pelvis. The preparation of a patient for Laparohysterotomy is the same as that for any other abdominal section; the best time for the operation is when the cervix and os have begun to dilate.

The Operation.

Incision 7 inches long above umbilicus through the abdominal wall; locate the tubes so we may be sure the uterus is not twisted on its axis; pack off the uterus from the abdominal cavity, make a 6 inch incision antero-post through the fundus of the uterus exposing the membranes, then quickly perforating the membranes grasping the feet of the child and delivering. The hands should not be withdrawn from the uterus until the delivery of the child is complete; clip the cord as in normal delivery and pass child to competent assistant, who, if need be begins resuscitation. If the placenta has not already detached itself from the walls of uterus a gentle squeeze of the placenta will make it easily separate from its uterine attachment, and is now removed through the abdominal wound. The uterus is sutured with No. 4-20 day chromic catgut, which is passed through the muscular wall of the uterus. These sutures are interrupted and are placed deep. When these are tied, the bleeding is practically controlled; this is reinforced with a continuous sutures of silk or linen through the fibrous

layer. As a rule very little hemorrhage accrues if the operation is done rapidly. If it should occur it should be controlled by gently kneading the uterus and the application of hot packs while the assistant gently grasps the broad ligament and makes compression upon the uterine artery with his fingers. The abdominal wound is closed as in any other case of laporotomy.

The post-operative treatment varies very little from that of hysterectomy. I do not believe that a poro operation should be resorted to unless it be where the uterus is in a state of fibrosis or carcinomatus, neither do I advocate the ligating of the tubes unless it is in thorough accord with the patient.

STRANGULATED HERNIA IN INFANTS—REPORT OF CASE.

H. McKee Tucker, M.D., Raleigh.

I shall not attempt to go into details of strangulated hernia, for little can be said that is at variance with that which has been so fully written on strangulated hernia in the adult. However, there are a few things that are of interest.

Frequency: Strangulated hernia of infants is comparatively rare, in fact very rare.

Estor after searching the records of nine large European clinics, found not a case. Out of two hundred and twenty-five of his collected cases from various sources, over half of these occurred during the first six months of life. He estimates the relative frequency of strangulated hernia in infants to adults as: 1 to 62, while Frickhoffer estimates the frequency as: 1 to 107. Broca, of Paris, out of 950 operations on children, found of these only nine cases of strangulated hernia.

Cause of strangulation: The majority of writers claim that the usual cause is a constriction of the neck of the sac, others that it is usually due to the tight constriction of the external ring. The case I operated on was due to a constriction in the sac.

Diagnosis: Under the head of diagnosis, let me emphasize the importance of always thinking of strangulated hernia in the vomiting of infants, for there are cases where no hernia was present prior to the attack of strangulation. Don't take the statement of the mother that no rupture exists, especially if the child has a rapid pulse, if shock is present and if constipation exists. Its early recognition is most important.

As regards the differential diagnosis, there is one condition that is sometimes mistaken for strangulated hernia in infants,

namely: hydrocele of the cord. The temperature, the absence of vomiting, the absence of constipation, etc., and the fact that hydrocele of the cord in infants soon disappears with the proper treatment, make it so a mistake in diagnosis should not occur. However, the tenseness of the sac, the statement of the mother that the enlargement appeared suddenly, (the truth being that she had not observed it before), the sac apparently being followed into the abdominal cavity and the inability to reduce it, have been the cause of mistaking hydrocele of the cord for strangulated hernia in infants.

Prognosis: Wm. S. Coly claims that the mortality from operations in strangulated hernia of infants is lower than that of adults, and much lower than that of the aged.

As in the adult, the prognosis depends upon how long strangulation has existed, the degree of resistance of the patient, and the tightness of the constriction.

A very frequent cause of death is the drowning of the infant in his or her own fecal vomit, as it comes out of the anæsthetic.

No one should ever operate for this condition without first washing out the infant's stomach.

Symptoms: There is little to be said here as regards the difference between infants and adults. Here you depend entirely upon the objective symptoms.

Treatment: Always operate as soon as possible. Certainly always at once relieve the constriction, employing free gastric lavage at the beginning.

Stromyers' dictum was: "If called to a case of strangulated hernia in the day time, the sun should not be allowed to set, if called in the night, the sun should not be allowed to rise, before the strangulation has been relieved." I wish to add that not only should he not allow the sun to rise or set before it is relieved, but that it be done as many hours before it rises or sets as possible. Every minute counts for much. There are some doctors who hesitate to perform a radical operation for

hernia, but it is his duty, if he cannot secure surgical aid at once to at least make an incision immediately and relieve the constriction, a radical operation being performed later.

The following is the history of a case operated on by myself:

Male, age 15 months, cried a great deal for the first three months of his life. Parents said they could see the intestines through the thin layer at umbilicus. They applied a 50 cent piece over the naval and in a short time the condition was cured.

History of attack: He had eaten peanuts Saturday morning, also shelled corn about 6 p. m., and vomited eighteen grains of corn.

Dr. Ottis Ray, who referred the case to me, called the following morning. Enema was given and washed out a quantity of peanuts. He advised operation at once to relieve the strangulation of an inguinal hernia. Operation was refused until Wednesday night, when the infant was brought to Rex hospital and operated upon Thursday morning at 3 o'clock.

The findings were that the constriction was in the sac, that a piece of intestine was strangulated, that the strangulation had caused a gangrenous spot the size of a quarter, and that this was perforated.

The gangrenous spot was excised, the rent closed with fine silk sutures, the gut returned, and radical operation performed. A very small cigarette drain was inserted into the scrotum. The vomiting which had continued from the beginning ceased and there was no vomiting from then on.

There was a profuse purulent discharge to follow from the scrotal opening; this pus burrowed up and infected the skin wound, but did not involve the underlying layers. The stitches were removed in the skin and in eight days he was carried home. Dr. Ray reported that the skin wound granulated rapidly and there was no return of the hernia two months after operation.

ANNUAL ESSAY—THE CANCER PROBLEM.

RICHARD N. DUFFY, M.D.

Who is there among us members of the medical profession who has not been touched by the pitiable plight of one afflicted with cancer, and has not wished with all his heart, while looking at the wasted and pain-racked frame, that he could solve this mystery of the medical ages and release his brother from the bonds of misery and certain death?

A disease so horrible in its course, so certain in its results, and affecting, as it does, so large a proportion of mankind and also animal-kind, has naturally had a great deal of thought devoted to it, and some of the best minds of the medical profession in all ages have attempted to solve the problem. The speculations in regard to its nature have been legion; some of them seem wild and others reasonable. The suggestions in regard to treatment are innumerable; some seem fantastic; others, useful.

It has occurred to me that it might be interesting to review the field of cancer research in this, your annual essay, and to determine, if possible, where we stand today in our search for the truth of the matter.

Historical.

That cancer was known and dreaded among the ancients there is no doubt. Hippocrates (470-361 B. C.), handed down to us his famous maxim: "What drugs fail to cure, that the iron (or knife), cures; what iron cures not, that the fire cures; but what the fire fails to cure, this must be called incurable." The Father of Medicine no doubt had in his mind certain superficial forms of cancer when he wrote this. Again in his "aphorisms" he tells us that, "It is better not to apply any treatment in cases of occult cancer; for if treated, the patients

die quickly, but if not treated, they hold out for a long time." The ancient commentators explain that by occult may be meant "not ulcerated" or "deep-seated."

The commentary of Claudius Galen (131-204 A. D.), contains many interesting observations on cancer. Galen regarded the disease as an accumulation in the system of one or other of the various humors. Guy de Chauliac (1300 A. D.), believed that cancer was closely allied to leprosy and advocated the use of the thermo-cautery in the superficial forms. These early Fathers of Medicine were, indeed, acute observers, and some of their ideas of cancer seem good and sound today.

Hunter (1728-1793), is said to have been the first to study the minute structure of tumors. The microscope, we must remember, was not discovered until 1620 by Jansen and then its development for practical purposes did not take place until the beginning of the nineteenth century. Hunter recognized the anatomical similarity between tumors and normal tissues and stated that tumors resulted from a modification of the formative process. These keen observations, however, were overlooked, for nearly everyone early in the nineteenth century accepted the theory then proposed by Broussais, that all tumors were simply forms of chronic inflammation.

Boerhave, early in the eighteenth century ascribed the origin of tumors to the lymphatic system and believed that cancer was due to a degeneration of the lymph.

With the perfection of the microscope to a sufficient degree to allow its use in histologic work, in 1830, began the formation of the modern ideas of cancer. The first important work was done by Muller and his monograph on the histology of cancer was published in 1838. From this time to the present date the profession has been divided, one portion favoring a biologic origin of cancer of the nature of an autogenous or hetorologous cell; the other, a microbic origin. Muller was an adherent of the cellular origin, but he believed that the cells

were derived from a formative fluid that escaped from the blood. In 1858 Virchow formulated his famous aphorism "Omnis callulae cellula" and applied this in his view of the aetiology of cancer. Since this time every theory of the autogenous origin of cancer has had Virchow's maxim as a basis.

Robin, in 1852, was one of the first to demonstrate that cancer had its commencement in the epithelial structures and Cornil, in 1865, in his contributions to the "History of the Histological Development of Epithelial Tumors" clearly showed the origin of squamous cell carcinoma from epithelium. In 1865 Thiersch discussed the epithelial origin of epithelioma of the skin in a very thorough monograph. Many authorities, however, still believed that carcinomatous tumors other than epitheliomata were of connective tissue origin, and it remained for Waldeyer, in 1872, to demonstrate most conclusively that all forms of cancer developed from a proliferation of the epithelium.

Frequency of Cancer.

Statistics seem to show that cancer is on the increase. Some observers claim that it is the cause of death in one out of every seven or eight of those who have passed the meridian of life. More conservative estimates make it the cause of ten per cent of all deaths at this period. Juliusberger, in 1905, published a series of statistics based on those of the most prominent German insurance companies. One company found that the total mortality from cancer from 1885 to 1889 was seven and eight hundredths per cent (7.8%). During periods of fifteen years each the writer found that there was a progressive increase in mortality from this disease of 1% in males and 1.5% in females. Women of the upper classes were far more prone to the disease than were those of the lower walks of life. Fifty years was the most frequent time of development. The stomach was the seat of the disease in at least 45% of the cases.

Ninety-six per cent of all deaths from cancer occur in persons over thirty-five years of age. Westbrook says that in New Jersey, in 1900, the deaths from cancer were more than those from tuberculosis. In 1907, in New York there were 7,000 deaths from cancer and 1,300 from tuberculosis. In the whole country, in 1910, there were, approximately, 80,000 cases of cancer. It is estimated that one woman in every eight who reaches the age of thirty-five dies of this disease.

During the six years preceding 1911, 176,019 patients died of cancer in England and Wales. The death rate in London increased from 42 per 100,000 between 1851 to 1860; to 92 per 100,000 between 1901 and 1904; in Berlin, from 55 per 100,000 between 1881 and 1885 to 85 between 1896 and 1900; in Paris, from 84 per 100,000 in 1865 to 120 in 1900. In the twenty-eight principal cities in the United States the death rate from cancer has increased from 48.5 per 100,000 to 77.3 per 100,000 of population from 1883 to 1907, a period of twenty-four years.

It is claimed by some observers that the increase is more apparent than real; that, in the first instance, more attention is being paid to the diagnosis and reporting of cases than formerly, and that, secondly, the longevity of the race is greater, thereby causing a larger proportion of individuals of the cancerous age to be attacked by the disease.

Roger Williams, however, denies that the increase of cancer is due to the fact that a larger proportion of individuals reach a mature age than formerly, and he ventures the assertion that cancer is four times as common as it was fifty years ago. He states that the saving of life in modern times has been confined largely to the pre-cancerous period, the death rate in males over thirty-five and in females over forty-five years having remained almost stationary, while the proportion of those attaining old age has decreased.

Newsholme argues that the increase of death rate is due chiefly to improved methods of diagnosis. However, Williams says that the increase of death rate is so enormous as to make this explanation seem far fetched. He states also that while it is possible that improved methods in diagnosis may add slightly to the total cancer death rate, these same improvements may also cause subtractions from it, and he shows that in the report of the Registrar General of England and Wales as late as 1880, such diseases as fibroid tumor, polypus and lupus were usually classed as cancer.

Reichelmann has shown that in the Berlin hospitals 20% of the cases of cancer demonstrated at autopsy were not recognized during life, and since the diagnostic skill of Berlin physicians is, perhaps, above the average, it is reasonable to assume that there is still a 20% increase in cases of cancer not recorded. At the same time certain forms of cancer which were previously quite prevalent are now on the decrease. An example in point is the scrotal cancer of chimney sweeps which was so common in the 17th century.

Dr. Welch, of Johns Hopkins, has made a most exhaustive analysis of reported cases of cancer to determine the relative frequency of cancer of the various organs. He collected a series of over thirty-one thousand cases and from this large number he reached the conclusion that one-fifth of all primary cancers are situated in the stomach and somewhat less than one-third in the uterus. Similar averages have been reached by Orth and others in their studies.

Spencer states that more women die of cancer of the uterus than from cancer of any other part of the body. In the 68th annual report of the Registrar General of births, deaths and marriages in England and Wales for the years 1901 to 1905 it is noted that 19,645 females died from cancer of the uterus. The next most frequent organ involved was the breast, the mortality from cancer of the breast being 14,308. Only 30

cases of those of cancer of the uterus occurred in females under twenty-five years of age. The highest mortality occurred between the ages of forty-five and fifty-five. Nearly 4,000 adult women, the great majority of them mothers, usually of large families, die annually of cancer of the uterus in England and Wales.

There seems no doubt that the disease is increasing alarmingly. This increase has been ascribed to various causes; the real cause no one knows. The most effective preventive measures are not known, and here we see the horror of the situation.

Aetiology.

Theoretically, the first point of attack of a disease is to determine its cause; practically, one sometimes finds out how to effect a cure and later discovers the cause. Quinine in malaria and mercury and the iodides in syphilis are premier examples of the usefulness of empirical practice. The laboratory worker on cancer has been most concerned in discovering its aetiology and developing from this its cure; the clinician has been more occupied in working out a plan of practical treatment. Let us first consider some of the more important of the numerous investigations into the aetiology of the disease.

In looking over the vast amount of literature upon the subject and sifting the arguments for and against the theories which are almost as varied as the number of investigators one is reminded of the lines from the speech of "Empedocles on Aetna"—

"The gods laugh in their sleeve
To watch man doubt and fear
Who knows not what to believe,
Since he sees nothing clear,
And dares stamp nothing false, where he finds nothing sure."

The theorists are divided into those who believe that the disease is autogenous in development, receiving its impulse,

perhaps, from some extraneous cause, and those who believe that it is due to some infectious agent from without.

There are two very definite facts, however, which one can elicit from the vast mass of evidence, and these are the causal relation of age and trauma to the development of these malignant growths. All cancer statistics invariably show that the disease is rare below the age of thirty-five and that the incidence increases with advancing age. Why this is so has never been answered. If this answer were forthcoming no doubt we would also have with it the remainder of the solution of the riddle.

There is a strong impression in the lay mind that trauma plays an important part in the development of all malignant growths. There is also a common concensus of opinion among all those who have studied the question that there is a very important causal relation between previous injury and the development of cancer. How frequently do we see malignant growths develop in the scars of old wounds. H. A. Kelly says, speaking of cancer of the uterine cervix, "There is no doubt that the injuries inflicted upon the cervix uteri during labor are a definite causal factor in subsequent cervical carcinoma. Ninety-eight per cent of the cases of squamous celled carcinoma in my clinic at the Johns Hopkins Hospital had had children, so that the proportion of cases in nulliparae was extremely small. In my private practice I have seen in all but three cases of cervical cancer in nulliparae, and in one of these the cervix had been forcibly dilated." Boldt has demonstrated cancer in its very incipiency developing in a cervical laceration.

The most common sites for the origin of cancer, as you know, are the breast, lip, stomach, rectum and uterus. The breast being in an exposed position is constantly liable to be injured by blows. The process of lactation, too, frequently causes an injury to the breast which may be a sufficient

stimulant to subsequent malignant degeneration. The lips may be injured by defective teeth. Frequently, also, in cancer of the lip one can obtain a history of pipe moking, especially of the short stemmed variety, the heat from the stem being here a constant source of irritation. The stomach may be injured by injudicious eating. According to the statistics of Juliusberger cancer of the stomach is much more frequent in the upper walks of life, and it is here that the stomach is more apt to be insulted as the result of high living. It is common experience to find gastric cancer develop in the situation of an old gastric ulcer. The rectum is frequently fissured or torn by large scybalous masses. The uterus, in addition to receiving injuries as a result of gestation is commonly, also, the seat of chronic inflammatory diseases which may be sufficient to give the necessary injurious stimulus to carcinomatous growth.

Malignant degeneration may occur in moles, warts, naevi, and so forth, which are exposed to frequent traumatism. Bloodgood, of Johns Hopkins, was one of the first to point this out, and he advocates removal of all these growths in individuals who have passed the age of forty, especially, if the growths are in an exposed situation.

Von Bergman was a strong adherent of the chronic continuous irritation theory of the cause of cancer. Gottheil says that whatever may be our theory as to the cause of cancer, injuries mechanical, thermic, actinic, chemical and, perhaps locally toxic undoubtedly play a great part in its development.

Hyde's researches tend to prove that the irritation of the skin from light plays an important part in the development of cancer. The reaction of the skin to the excessive action of light is manifested by hyperaemia, pigmentation, telangiectases, atrophy, hyperkeratosis or cancerosis. In some individuals these various stages of reaction may occur in regular order of succession, and we then have that rare disease of the skin known as xeroderma pigmentosum. Hyde proves by statistics

that the pigmentation of the skin in the negro gives him relative immunity to cutaneous cancer. He also believes that the incidence of internal cancer is less in this race for the same reason.

Many other facts have been noted as evidence in favor of the traumatic theory. Among them may be cited the fact that long continued irritation of the skin produced by the ingestion of arsenic is productive of epithelioma. Dubreuilh reports four cases of keratosis following long continued administration of arsenic, in one of which epithelioma of the finger supervened.

Cancer of the mouth is rare in European women, yet in Ceylon and India women suffer greatly from cancer of the mouth, probably from chewing of betel nuts and holding the plug in the mouth. Cancer of the skin of the abdomen, a rare condition, is found quite commonly among the natives of Kashmir, who wear abdominal charcoal heaters next to the skin.

The opponents of the traumatic theory are very few. Among the most conspicuous of these is Councilman. He claims that the theory lacks all experimental confirmation. To the unprejudiced observer, however, the array of facts in support of the theory is too great to be overlooked, and it seems quite certain that trauma must play some part in the causation of cancer, but as to what this part is the present state of our knowledge does not justify an answer.

Among other factors which have been thought to be exciting causes of the development of cancer are the influence of heredity and locality. At the time when the inheritance of tuberculosis was implicity believed in it was considered that cancer was second only to tuberculosis in the frequency of its inheritance. However, more mature investigation does not tend to substantiate the earlier claims.

Cullen, in his exhaustive work on cancer of the uterus, discussing his cases of squamous cell carcinoma of the cervix says that in at least 82% any hereditary tendency could be almost positively excluded. In concluding his discussion of a statistical table of three varieties of carcinoma of the uterus, he says, "These figures, so far as they go, tend to show that heredity plays a minor role in the development of cancer of the uterus." At the same time the influence of heredity cannot be entirely overlooked. Roger Williams, in 1892, reported a series of 136 cases of cancer of the breast, with a history of heredity in 29.2%. Among other cases he cites the well known striking fact that the father, the brother and two sisters of Napoleon all died of cancer of the stomach and that Napoleon himself died a victim of the same malady. Broca reports sixteen deaths from cancer in a family of twenty-seven members. The adherents of the infectious origin of cancer maintain that the apparent inheritance of the disease is simply an inheritance of a predisposition to infection as in tuberculosis. It would seem, indeed, reasoning from analogy, that the truth of the matter *is* that in certain families there may be inherited a *predisposition* to the disease such as we find in cases of infection, cerebral apoplexy, arterial degeneration, etc.

Locality as the cause of cancer is a theory advanced by some authorities. D'Arcy Power and Wells have collected a series of cases showing several deaths from cancer in the same house in a comparatively short period of time, no blood relationship existing between the victims. Shattuck has reported an instance in which four persons died of cancer in the same house in fourteen years. All such instances, however, prove equally good data in the proof of the arguments of the adherents of the infectious nature of the growths.

Some statistics seem to show that cancer is more prevalent in damp, clayey soils; others tend to prove the reverse.

Poppleman, for example, states that in a town of eight thousand inhabitants during the past twenty years the dwellings nearest water showed the greatest proportion of cases, while Weinberg and Gastpar state that no definite conclusions can be drawn from the study of the distribution of the disease either in parts of the town or in certain houses.

Certain articles of diet have been supposed to bear an aetiological relationship to the development of cancer. Reyburn believes that diet has a marked influence on the growths. He states that cancer is comparatively rare in hot climates where rice and starchy foods constitute the bulk of the diet. On the other hand where nitrogenous foods are largely consumed, the incidence of cancer, he says, is much greater.

However, the views in regard to the aetiological relationship of diet are very conflicting and the exponents of this theory vary from those who believe cancer to be traceable to a uric acid diathesis and advocate a vegetable diet to Senn, who found that the Esquimaux, who live on almost an exclusive raw meat diet are practically immune to tumors of all kinds. Bainbridge believes that if diet plays any role at all in the causation of cancer it is due to the irritating effects of improper diet on the digestive organs.

As a result of Packard's studies he believes that the ingestion of demineralized foods so common in civilized communities, especially in the form of white bread, is largely responsible for the prevalence of cancer. He advocates placing cancer patients on a diet rich in mineral products and reports favorable results from this plan. He also advocates the general adoption of such diet as a prophylactic measure.

It has been noted by various investigators that cancer is more frequent among those who imbibe freely of alcoholic beverages. No explanation of this fact has been advanced

except, perhaps, that it is due to the irritating effects of the alcohol on the system.

The conclusions of the various exponents of the dietetic theory are too contradictory to be of any value. The verdict in this case must therefore be not proven.

Passing from these theories which endeavor to explain the origin of cancer in a more or less general way, we will next take up those which deal with more tangible evidence. Among the first of these are the autogenous theories. After Virchow's master work on cellular pathology there was advanced a theory attributed to Cohnheim, but which had previously been advocated, as pointed out by Pianese, by Durante in 1874, one year before the appearance of Cohnheim's communication. According to this theory, during foetal life, portions of epithelium become nipped off and included in the connective tissue. Later on in life these isolated nests of epithelial cells become in some way stimulated to activity and give rise to carcinomata. This theory has had many adherents and was for years a favorite one. However, more careful, further investigation has failed to reveal any evidence of the existence of the isolated colonies of embryonic epithelial cells described, and in recent years the theory has been gradually abandoned. Nevertheless, it was a great advance in the study of tumors and it well serves to explain some varieties, for example, dermoids and some connective tissue tumors.

Following Cohnheim's and Durante's lead, Ribbert next proposed a theory which could be considered a modification of Cohnheim's and Durante's idea. Ribbert claimed that cancer was not due to the embryonic character of isolated nests of epithelial cells which had been nipped off, but that it was due to the separation of the cells from organic continuity. He did not believe that the early stages of the growth involved a dipping down of the epithelium into the connective tissue, but

rather the reverse. The original activity, he believed, occured in the connective tissue which grew upward into the epithelial structures and nipped off colonies of these cells. A study of the histology of cancer, however, fails to confirm Ribbert's views. One finds that the activity is in the epithelium and that the epithelial cells in the depths of the connective tissue are directly continuous with those of the surface, there being scant evidence of any nipping off of cells.

The modern ideas of the aetiology of cancer fall, according to Ewing, into one of three groups: the parasitic theory, the theory of cell autonomy, and the modern biological and biochemical conceptions.

Many of the more recent investigators have believed that cancer is a disease of infectious and contagious nature and that it is not of autogenous development, though even as long ago as 1797 cancer was considered to be contagious by the health authorities of Prussia. The infectious agent, be it protozoan or bacterial, is postulated as one having a special affinity for epithelium. The microscope, in the past twenty-five or thirty years, has been the means of one brilliant discovery after another of the materies morbi of many previously obscure affections, and we have had revealed to us much knowledge in regard to the number and variety of parasitic diseases. We have also seen the selective affinity that many parasites have for certain structures. Two very common diseases, the causation of which baffled many minds for years, malaria and syphilis, have both been shown to have an organic specific infecting agent. Why should not cancer, which has many points of resemblance to infectious processes, be itself of infectious nature? As a result of this very vexing question we have before us the conclusions of many investigators. Some are very positive that cancer is of parasitic nature; others are equally positive that it is not.

Kelly says that belief in contagion rests upon four things: (1) The theory of the contagiousness or infectiousness of malignant tumors in mice; (2) The transmissibility of the Jensen mouse tumor; (3) Inoculation experiments; (4) Reports of coexistent or coincident cancer in families supposedly due to accidental infection. Many investigators, since 1840, when VonLangenback injected particles of a medullary carcinoma into a dog and demonstrated the presence of cancer in the animal two months later, have reported, from time to time, successful inoculation experiments in animals. The successful inoculation of cancer in human beings has been reported in one or two instances. It is, unfortunately, a rather frequent occurrence to observe implantation of carcinomatous material in the operative wound after removal of cancer. The successful inoculation of malignant tumors from man to the lower animals and vice versa has, however, never been accomplished. Lee, Loeb, Ehrlich and others have made extensive investigations into the transplantion of mouse cancer and have successfully transplanted these tumors from mouse to mouse for many generations. Jensen made the first large series of experiments in this field and descendant growths from his original tumor have been transplanted again and again. It is claimed by Michealis that these tumors, however, are not of the same nature as cancer in man and he points out several very distinct differences.

Loeb, Gaylord and Clowes have reported several instances of the endemic occurrence of malignant growths in the lower animals. There have also been reported a formidable list of cases of cancer occurring in man and wife, the socalled cancer-a-deux.

E. F. Smith, as an argument in favor of a parasitic infecting agent of carinoma, has cited the analogy of a disease known as crown gall which sometimes does serious injury to forest trees, fruit trees and shrubs. He describes many points of

similarity and reports the isolation of a specific organism for this particular disease.

Among the earliest supposedly parasitic bodies described in cancer are the so-called "bird's-eye inconclusions" or Plimmer's bodies, described originally by Foa. These bodies consist of a well defined double capsule enclosing a clear fluid in which is suspended one or more darkly staining granules, the total size of the bodies being extremely minute, or equal in size to the nucleus of the cell. From one to twenty of these may occur in the same cell and usually lie adjacent to the nucleus. They resemble closely the Plasmodiophora brassieae discovered by Woronin in 1876 and established by him as the cause of a disease among the cruciferae, especially in cabbage. Plimmer found these bodies in four hundred cases of cancer and did not find them in other forms of tumors as fibromata, papillomata, gummata and so forth. Farmer, Moore and Walker, in studying the nuclear divisions of sexual cells, have demonstrated that Plimmer's bodies occur normally in cells during the production of sexual elements in vertebrata. These findings, of course, weaken the arguments for the specificity of these bodies for carcinoma.

Adamkiewicz has demonstrated what he thinks to be protozoa in cancers and has given them the name of sarkolytes. These he believes to be the specific parasites.

Schmidt, in 1907, discovered an amoeba in a mole obtained from new growths. This he believed to be the parasite of cancer and he reports that he has been able to produce cancer in mice by the injection of this amoeba. His results, however, have not been confirmed.

As early as 1886 Scheurlin found bacteria in cancer. San Felice has described yeast organisms which he believes to be the specific agent. Thomas J. Jackson, E. Van Leyden and

Gaylord have all found protozoa which they consider the causal agents.

Doyen asserts that one can obtain by culture from all, or practically all, tumors a characteristic micrococcus. He regards this micrococcus as the specific cause of cancer and has given it the name of micrococcus neoformans. He claims that he can produce cancer by the injection of this organism into animals. His results, however, have been investigated carefully by many of the workers on cancer and they fail to confirm Doyen's claims.

Butlin believes that the cancer cell itself is a parasite of the nature of a protozoan and he cites many points of analogy between cancer cells and protozoa.

The arguments against the infectious nature of cancer are many. In the first place it is argued that the original effect of an infection is tissue destruction and later proliferation to heal the defect. In cancer we have the reverse of this in that the earliest stages which have been observed show no distruction of tissue but, on the contrary, a proliferation and invasion of the connective tissue by the epithelial elements. It is contrary to all pathological conceptions that an infectious agent can enter into an epithelial cell and cause this cell to reproduce and multiply regardless of outside conditions.

In discussing the widespread belief that cancer may be transplanted by direct contact of the cancerous area with another part of the patient's body or with another person, Bland-Surton has this to say: "I have never seen the upper lip infected from a cancerous lower lip. Surgeons who are actively engaged almost daily in performing operations for cancer frequently cut or prick their fingers, but a cancer transplanted in this way is unknown." It has been a frequent experience with surgeons, however, in operating for cancer that some times there is a widespread, rapid recurrence of

the growth in the wound and the disease becomes soon more extensive than before. Nevertheless, we have as evidence against this being an infectious process the indisputable fact that it has long been known that normal cutaneous epithelium accidently engrafted into sub-cutaneous tissue, the cornea or iris, will live and grow. It has also been demonstrated beyond the shadow of a doubt that during ovariotomy, especially in cases of large ovarian adenomata, growths similar to the ovarian tumor have arisen in the abdominal wound, unassociated with any recurrence in the pelvis, or secondary nodules in the peritoneum or in the viscera.

Koch formulated three postulates, the fulfillment of which is necessary in the demonstration of any parasite to be the specific infecting agent of cancer or any other disease: (1) The micro-organism must be present in all cases of the disease; (2) It must be capable of being cultivated apart from the animal; (3) It must reproduce the disease when inoculated into a healthy animal. In spite of the vast amount of research which has been done with the view of discovering a specific micro-organism of cancer, not one has been discovered which will satisfy even one of these postulates.

In 1907 Hollister confirmed an opinion previously expressed by Oestrisch that there is no enlargment of the spleen in cancer patients. This seems to point most positively against the infectious nature of malignant tumors because all the known infections cause splenic enlargement. According to Butlin, in order to be accepted as contagious, it must be shown that an acquired growth is located in a part that has come in contact with the first tumor, either directly or indirectly, that the second growth has appeared within a reasonable length of time after the first, and that the two growths have the same histologic structure. We find that hardly any of the recorded cases of contagion can be looked upon as such viewing them in this light. Again, considering

the so-called cancer-a-deux which is cited as evidence of the contagious nature of cancer, it may be said, according to statistics, that about 9.3 per cent of all persons passing the thirtieth year die of cancer and hence on the grounds of probability, according to Neiditsch, an example of conjugal cancer may be expected in one of every 116 couples over thirty.

Nicholas Senn, in order to prove that cancer was not of infectious nature, deliberately inoculated himself with cancer tissue freshly removed from a patient, but without any growth resulting.

Many authorities claim that the so-called parasites which have been described as the cause of cancer are nothing more nor less than one or other of the irregularities or degenerations which occur in the cancer cells.

One of the more recent theories in regard to the causation of cancer is that evolved by Fischer. He obtained an epithelial proliferation by injection of "Scharlach R" into the subcutaneous tissues of a rabbit's ear. From this experiment he has deduced the theory that cancer is due to the existence in the body of certain collections of cells or "tumor matrices" of embryonal or post-embryonal origin. These may be acted upon by cliemotactic substances circulating in the blood which have no effect upon normal body cells. This is a modification of Cohnheim's theory. Fischer believes that the chemotactic substances, to which he gives the name "attraxins", are the result of the growth of a cancer parasite.

One of the most uniquie and startling theories is that produced by Beard. He believes that cancer is due to the displacement of germ cells occurring in the embryo. He found in fish that their displacement and subsequent development were a frequent cause of malignant growths. He also observed the relation between the growth of the pancreas and the disappearance of the trophoblast in fishes and from this elabo-

rated the trypsin treatment of cancer. Beard's theorizing, however, is not based upon very substantial reasoning. Nevertheless, his theory has created a great deal of interest among the workers in cancer research, and we shall see presently that the mode of treatment proposed by him and based upon his theory has been shown to have some merit.

It is rather discouraging that, notwithstanding the great amount of gray matter devoted to this subject for about twenty-four hundred years, we are still in the dark as to the real cause of the disease. Nevertheless, many interesting facts have been brought to light and much of value has been learned.

Passing from the question of aetiology, let us next consider, briefly, the pathology of the disease.

Pathology.

The pathology of cancer has been very well worked out and is so familiar to you all that I shall mention only a few of the salient points and some of the interesting new facts which have been discovered.

L. S. Pilcher has furnished us with a most excellent terse description of cancer. "It is", he says, "in the lawless proliferation of pre-existing epithelial cells in luxuriant, irregularly arranged masses that invade underlying and surrounding tissues, permeating, destroyed them and, finally, themselves attaining a mass which can no longer be adequately nourished by an accessible blood supply, and which itself then falls into central decay, while at the periphery the process still goes on, that cancer consists."

The cancer cell is characterized by an enormous capacity for continuous "riotous" growth. It may be always assumed that no malignant neoplasm ever succeeds in growing to the extent to which inherent ability entitles it. The mere fact that

this is true is excellent evidence that there is some natural protective agency existent in the body against cancerous formation. Ehrlich has calculated from his studies of the rapidity of growth in experimentally produced cancer in mice, that if a single cancer graft proliferated at the usual rate observed in one of his experimental series, and if every descendant graft were implanted into other mice and the process repeated as fast as the tumor reached a size of one millimeter, leaving out of consideration all difficulties in the way of space and nourishment, at the end of one year the total amount of tumor tissue produced would form a mass which, if cubical, would have an edge one thousand billion kilometers long and would require a ray of light one hundred and five years to travel its length!

During the process of multiplication of the cells in cancer, various irregular forms may be seen. The cells divide by indirect division or karyokinesis. Frequently, one may see a symmetric mitoses and the resulting abnormally large or abnormally small cells. Giant cells and very large, lamellated, mulberry shaped nuclei are often met with. Mother cells may be observed containing one or more other cells in their protoplasm, also, frequently, red blood corpuscles and polymorphonuclear leucocytes. The nucleus and the cell protoplasm, as well, are both prone to various degenerations. These are most important, inasmuch as the majority of investigators claim that all of the so-called parasites of cancer which have been discovered are nothing more nor less than one or other of these cellular degenerations.

In the last few years some very astounding facts have been discovered in regard to the nature of the cancer cell. These facts have been made possible by experiments instituted by Harrison at Johns Hopkins in 1907, when he demonstrated that it was possible to grow the embryonic tissues of frogs

outside of the body in a coagulable lymph. Since this time Burrows and Carrel have shown that it is possible to grow, also, practically all of the tissues of warm blooded animals in vitro. They have, also, been able to grow in vitro two human tumors.

Hanes and Lambert, making use of the previously discovered technique of growing tumors in vitro, reported in March, 1911, the most astonishing fact of the finding of amoeboid movement in the cells of a sarcoma. It has since been shown, also, that the cells of cancer growing in vitro likewise have this amoeboid motion. Hanes and Lambert believe that malignant growths probably infiltrate the tissues through the power of amoeboid motion in the component cells.

It is difficult to estimate the very great importance of these findings, but they will, no doubt, open up a new field for investigation which may give us valuable information in regard to the aetiology of the disease.

Symptoms.

The symptoms of cancer are too well known to you to warrant description here. There has been some discussion in regard to the causation of the cachexia of the disease and I will simply state that this symptom has been attributed by various investigators to one or other of several things: (1) the hemolytic action of cancer toxins upon the red blood corpuscles of the patient; (2) the deleterious effect of the absorption of toxins from bacterial growth in ulcerated carcinoma; (3) the injurious effects of these toxins on the digestive organs. It is more than probable that all of these factors play a very important part in the causation of cachexia.

Diagnosis.

In the present state of our knowledge of the treatment of cancer it is most important that every possible means be used

to diagnosticate the disease in its early stages, so that the cases may receive appropriate surgical intervention before they have become inoperable.

In the pre-microsopic era of medicine clinical diagnosis was the sole diagnosis and, naturally, many mistakes were made. As an aid in the clinical diagnosis of cancer, Campbell de Morgan, in 1872, described the occurrence, especially on the abdomen and chest in patients debilitated by cancer, of numbers of small raised red spots looking like naevi but being patches of pigment. They were called de Morgan spots or cancero-derms. They were thought to be pathognomonic of cancer, but it has since been observed that they are frequently met with in patients after middle life who are not afflicted with cancer, and, therefore, are of questionable value in the diagnosis.

The use of the microscope is practically our one infallible means of diagnosis. On account of the location of some of the growths and because, also, it is necessary to complete the operation immediately after the growth has been incised, if it be cancer, it is not always practicable to employ the microscope. On this account many investigators have endeavored to discover other methods of diagnosis which might be applicable to all cases.

Kelling, in 1906, described a specific hemolytic reaction of the blood serum of cancer patients towards the blood corpuscles of the lower animals. Crile has been experimenting with the hemolytic action of the blood serum of cancerous human patients on normal human red blood corpuscles. He claims that hemolysis occurs in 82% of cancer cases. However, the reaction occurs frequently in other diseases and it is questionable whether the test is of much practical value.

Elsberg has attempted to produce a specific hemolytic skin reaction by the injection of red blood cells under the skin of

the carcinoma patient. His test has been found, however, to be unreliable.

The anti-trypsin reaction which has been evolved in recent years depends upon the fact that the blood contains anti-bodies which are capable of arresting the digesting action of trypsin. It has been found that the blood serum of cancer patients contains these anti-bodies in much larger percentage than normal blood. The test seems fairly reliable but, unfortunately, however, a positive reaction is not certainly diagnostic of cancer in that other conditions have been found to give the test. A negative reaction seems to be reliable to exclude cancer.

Several tests have been introduced in recent years with the urine of cancer patients. Salkowski and Kojo have found a decided increase in the nitrogen excretion. Salomon and Saxl have found an increase in the excretion of a substance known as oxyproteic acid. These tests, however, like the others, occur in certain other diseases and are, therefore, not absolutely reliable.

One of the most consistently positive of the new tests is what is known as the meiostagmin reaction. It is one of the so-called immunity reactions and was discovered by Ascoli. It consists in the mixing together of the patient's serum with some known cancer material and incubating the mixture at 37 degrees centigrade. The surface tension is then measured by a specially devised instrument and is found to be lowered in practically all cases. There is also an increase in the number of drops in the liquid. Ascoli's results have been confirmed by others.

Recently Freund and Kammer have introduced a test analogous to the Widal reaction in typhoid fever. It depends upon the clumping of cancer cells held in suspension by the

blood serum of a cancer patient. These two investigators claim that the reaction is quite reliable.

Unfortunately, none of the diagnostic tests so far evolved is sufficiently simple to admit of general usage, and for the majority of the profession reliance has to be placed, as in the past, on clinical diagnosis, supplementing this whenever possible by microscopic diagnosis.

Treatment.

Is there a cure for cancer? This may be answered by yes, and then qualified. The only known, absolutely definite cure for cancer today "is early and thorough removal of the affected part with associated lymphatics and lymph glands." To be of any avail the removal must be very early, before the disease has had an opportunity to spread beyond surgical intervention. There is then a stage in the development in every cancer when it is curable by our present methods. If it were only feasible for the surgeon to bring to operation every cancer patient during this stage, it would be possible to certainly eradicate the disease in every case in which vital parts which cannot be subject to operative interference were not involved, and cancer mortality per se would be practically nil. But this thought is too Utopian for one to even dream of its practical accomplishment. There are few organs in the body which have not been partially or totally extirpated for cancer and there seems nothing that the surgeon has left undone in the way of ingenuity and enterprise to relieve the sufferer from his tortures, yet, as Bland Sutton says, "It baffles surgical art by its insidious growth, its indefinite limitations in the tissues, its infection of the lymphatic system, and its property of quiescence for many years and then of recrudescence."

What is to be done about the inoperable cases, those cases which by reason of recurrence, extensive growth before being

seen, or involvement of vital parts cannot be thoroughly removed by the surgeon? This is a question which has puzzled many minds for many years. Although in most instances these cases are practically hopeless with our present day treatment, still, I shall attempt to show by a recital of some of the results of investigation along this line that they are not all entirely so. Many methods of treatment have been devised, far too many to be all reviewed with profit. Some of them seem nothing more than mere vagaries of the mind; others have proven useful.

Great interest was aroused when the statement was made that the X-rays had a remarkable deterrent action upon malignant growths. Careful investigation has dispelled the original sanguine hopes that it was curative in all cases, and it has been found that the effects of the rays are local and only the superficial growths are markedly influenced. It has been found that the X-ray, although an effective therapeutic agent in some cases is distinctly a dangerous one, and X-ray burns of severity may occur as a result of injudicious application. It has been found that the rays in certain instances are useful to prevent recurrence after operation provided the exposures are begun early. Some subsidence of pain, it is noted in most cases, and some drying up of the secretion in the ulcerating forms after exposure to the rays.

It is the conclusion of the majority of investigators, therefore, that the X-ray, although curative in some superficial forms of cancer and causing subsidence of symptoms occasionally in others, which subsidence, however, is only temporary, should never be used except in inoperable cases, or as a prophylactic after operation, as a possible, though not yet proven, means of avoiding recurrence.

It has been found that by prolonged exposure to the X-ray it is possible to produce such an alteration in healthy tissues that a cancer may eventuate in that situation. The X-ray then

occupies a unique position in that it may be considered as both curative and causative of cancer.

The use of radium as a treatment of cancer occupies a position somewhat analogous to the X-ray. It has been used and advocated in practically the same conditions, and the same conclusions have been arrived at in regard to its therapeutic value. In addition, also, it has been advocated that radium be introduced inside of cancers by means of specially devised tubes as a routine procedure.

A method of treatment devised and exploited by Keating-Hart several years ago, and which has proven valuable in certain cases, is what is known as fulguration. The method consists in the application of as powerful an electric spark as possible from a metal electrode at a distance of from two to four centimeters with a frequent change of position, and for a period of five, ten to forty minutes, the patient being fully anæsthetized. The carcinomatous tissue is then extirpated with a knife or a sharp curette and the wound exposed to the spark ten to fifteen minutes longer. The treatment inflicts a practically negligible injury upon the neighboring tissues or organs.

Czerny and Pozzi are enthusiastic advocates of the method, especially in superficial carcinomata, but Schulz, Bier, Abel and Cohn do not seem to bear out their optimism and claim that fulguration is of questionable value.

The rays of the sun, in addition to being thought to be one of the causes of cancer, have an advocate in Widmer for the treatment of the same disease, and he reports a cure of an ulcerating cancer on the back of the hand by this method. I have seen no confirmation of his observations.

Coley, Beebe and Tracy have reported favorable results from the injection of combinations of the toxins of Bacillus

prodigiosus and Streptococcus pyogenes and, also, in some instances, Staphylococcus pyogenes, and B. coli communis. Their experiments were the result of observations that if erysipelas attacked a cancerous breast the growth of the cancer appeared to be checked for a time and, also, if the wound became infected with erysipelas after removal of the breast for cancer, that recurrence would be delayed longer than in ordinary circumstances. The method has been brilliantly successful in some instances but is not, however, devoid of danger.

Doyen, as was mentioned in a discussion of the ætiology of cancer, has advocated the use of a vaccine containing micrococcus neoformans in the treatment and claims that it is a specific. His results, however, have not been confirmed and the majority of investigators conclude that there is very little value in his work.

Basing his method upon his theory of the cause of cancer, Beard, Lecturer on Comparative Embryology at the University of Edinburg, advocates the use of trypsin and amylopsin in the treatment. The method has been tried out by various investigators and seems to have some value. Its effect is local only and it is injected directly into the growth. Administered internally it does not seem to have very much effect on the cancer cells. In some cases the injections cause a direct shrinkage of the growths, improvement in the general health, diminution or cessation of pain and diminution in the discharge and a decrease of fetor. These favorable results have been reported by most of the investigators but its limitations are recognized by the majority.

Several years ago much interest was aroused among the profession when Jacobi advocated the use of methylene blue in the treatment of inoperable carcinomata. He administered the drug in the form of a pill, giving from two to six grains

daily combined with three-fourths of a grain of belladonna daily to prevent dysuria, and in some instances also he added from one-fortieth to one-twentieth grain of arsenic trioxide. Jacobi does not claim that the drug is curative, but only that it is beneficial and that he has been able to prolong life by its use.

A most remarkable method of treatment in inoperable cases of cancer of the breast is that proposed by Beatson. Reasoning from the effect which double oophorectomy is supposed to exercise on the mammary glands, he advocated the removal of the ovaries and Fallopian tubes in these cases. The results are variable, but in some instances have been truly astonishing, the disease having completely disappeared, but in others it has been followed by a recrudescence.

Stuart-Lowe has advocated the removal of the thyroid in inoperable cancer and reports favorable results from this operation.

Bier claims that the injection of defibrinated pig's blood directly into cancer is beneficial.

Schmidt has used a vaccine prepared from his mycetozoic micro-organism and claims that it is beneficial. The results, however, seem to be only temporary.

Fenwick has treated a number of cases by injections of a sublimate solution of bichromate of potassium and claims that in some instances it is curative.

Becker advocates injections of a solution of sodium and potassium hypochlorites.

Vaughn, in 1910, recommended the injection of a non-toxic residue into the body from which the cancer was obtained and reported favorable results from his method.

A mode of treatment which has undoubted value, simply as a palliative measure, is the application of acetone to the

curetted surface of an ulcerating carcinoma. This was advocated by Gellhorn. The acetone is intensely hygroscopic and its effect is a marked reduction in the size of the ulcerating area, a disappearance of the foul odor, a gradual cessation of the discharge and hemorrhages.

The widespread use of animal experimentation in the study of cancer, which began about 1902, has been the means of many intensely interesting researches into the possibility of producing immunity to cancer.

That spontaneous recovery from cancer frequently occurs in mice is well known. Spontaneous recovery in human beings is also occasionally observed. Gaylord and Clowes have reported fourteen such instances from the literature which seem to be authentic. Czerny has reported two and Clarke one since this time.

These facts seem to indicate the existence of immune forces capable of terminating the disease. Basing their experiments on this idea, many investigators have attempted to produce an artificial immunity to cancer in mice and each investigator reports successful results from his own special method. Ehrlich reports sixty-six to ninety-four per cent. of successful results by the injection of an attenuated cancer virus. Crile and Beebe report successful results in the treatment of cancer in animals by the transfusion of blood of spontaneously recovered animals of the same species. Walker, Gaylord, Clowes, Sticker and Schœne have also reported the prevention of the growths or the regression of existent growths by attempts at artificial immunization. They do not claim, however, that the method is applicable to man. Nevertheless, some observers have reported the use of such measures in human cancer which was followed by beneficial results.

The fact that occasionally it is noted, after partial operations in inoperable cancer, that there will be an unexpected

disappearance of the remainder of the growth and also sometimes of metastases in other situations lends credence to the belief in the possibility of producing artificial immunity in man.

Coca and Gilman have reported from the Phillipines beneficial results in all cases from the injection of a vaccine made by grinding up carcinomatous tumors and using a sterilized juice from the same. In twenty cases they have obtained an apparent cure.

Berkeley and Beebe have recently reported favorable results from the injection of a new serum produced by successive injections of a specific human cancer extract into an alien mammalian species.

Hodenpyl has reported that he has been able to obtain beneficial effects by the use of cancerous ascitic fluid taken from a patient who showed a great amount of natural resistance to cancer. Basing his studies upon Hodenpyl's work, Risley has recently conducted an extensive series of experiments at the Massachusetts General Hospital on the treatment of inoperable cancer with various normal and abnormal body fluids and with cancerous ascitic fluids. He has found that the various body fluids non-cancerous in both normal and abnormal individuals have no effect upon the disease. With cancerous ascitic fluid he has obtained beneficial results in a small percentage of the cases.

Echone reports from Ehrlich's Experimental Institute at Frankfort, that he is able to produce immunity to epithelial tumors in mice by repeated injections of normal mouse embryonal tissue.

I have detailed to you these various methods of treatment in order that you might see the enormous amount of work that is being done in cancer research. There are many more methods advocated that have been omitted, but time and patience forbids the introduction of them all. Most of the

drugs in the pharmocopœia have been used at one time or another in the treatment of cancer. The various caustic liquids, pastes and so forth which are applied to skin cancers are, I am sure, well known to you and need no discussion here. It is well enough for us to remember, however, that Maier has found that aspirin usually relieves the pain caused by extension of cancer to neighboring tissues and nerve trunks.

The trend of this review now brings me to what seems to be *the most distinct* advance in cancer research, the recent discovery by Prof. A. Von Wassermann of a curative agent acting by way of the blood. Wassermann's discovery is the result of a "beautiful series of deductions" stimulated by Ehrlich's work on chemotherapy and his discovery of the curative value of salvarsan in syphilis. According to Ehrlich, remedies are of two kinds: organotropic, or those which affect only the blood cells, and parasitotropic, or those which attack only the invading organism without injury to the body cells. It had been despaired of as a possibility to find a substance which was parasitotropic for the cancer cell, but this is what Wassermann has accomplished.

He has found that sodium tellurate and sodium selenate have a special affinity for cancer cells, and he has also found that by combining these with eosin that he is able to cause a rapid diffusion of the substances throughout the whole organism. He uses, now, a compound of eosin and selenium which, it is claimed, needs careful chemical treatment for the development of its full activity. By injections of this compound into mice on successive days he is able to produce a cure of mouse cancer in about ten days. In some cases where the tumors have been very large death has resulted on account of the rapid breaking down and absorption of an overwhelming amount of cancer tissues.

Wassermann, with justifiable caution, concludes that for the present we have no reason to believe that this remedy will act

in a similar way on human beings with cancer. He is of the opinion, however, that further work along the same line will develop progress in the therapy of human cancer. Despite these modest claims one cannot but be impressed by this most astounding discovery of one of the best investigators known in medicine today and see the promise of great things for the future.

Conclusion.

The cancer problem, it may be said without fear of contradiction, is the most universally interesting subject in medicine today. Hundreds of investigators are devoting their lives to its solution. Cancer hospitals, cancer laboratories and cancer societies are being established all over the civilized world. Large sums of money have been donated to carry on the work.

The national importance attached to the cancer problem was indicated when on April 9, 1911, President Taft asked Congress for an appropriation of fifty thousand dollars for the establishment of a laboratory to conduct investigations into the causes of cancer in fish.

Notwithstanding the fact that, in spite of the vast amount of research done on cancer, we are still in the dark in regard to its ætiology and its specific treatment, nevertheless, genuine progress has been made. In 1862, Virchow stated that no human being could define, under torture, exactly what a cancer was. This same statement can be made today, but we know infinitely more about the disease than we did in 1862. One can cure cancer today if he gets the case in time, provided vital structures are not involved. Childe has said: "Though all attempts to elucidate the origin of cancer have hitherto ended in disappointment, yet it cannot be contended that effort, whether clinical, pathological, experimental or lastly, surgical, has during the last quarter of the century been barren of results. It has been void, it is true, of any

discoveries startling enough to arrest the attention of either the medical profession or the public." However, in view of the discoveries of the past year this concluding sentence is not now a statement of fact.

Progress has been almost unconscious, but by viewing the present with the past one can see that much has been accomplished. Of the older surgeons, Brodie, Benedickt and Paget, for example, considered cancer of the breast as surgically hopeless. Sir James Paget wrote, in his lectures on Pathology: "I will not say that such a thing as cure is impossible, but it is so highly improbable that the hope of this occurring in a single instance cannot be reasonably entertained." "Melancholy enough," says Childe, "as is the picture of our treating cancer at the present time, it must be admitted that it forms a forcible contrast with that just portrayed."

Crile thinks the advancement in the treatment and prognosis of cancer cases has been marked. Twenty-one years ago Butlin collected statistics of three hundred and sixty-four operations for cancer, two-thirds of the patients having died of the operation and of the one hundred and twenty-six survivors, only one was known to be alive and free of a recurrence after three years.

The elder Gross has been quoted by Halsted as stating that he had never cured a case of cancer of the breast, and yet the latter, after perfecting his technique, reports that 47% of all cases of breast cancer operated on by him have remained well for three years or more. The operative mortality in representative clinics today is less than 1%.

In a discussion of the operability of cancer of the uterus in the Gynecological Congress at Dresden, it was found that the percentage of operability, which had been thirty in earlier years had risen to eighty per cent. and more (Mackenrodt makes it 92%), and that the primary mortality had been

lowered from 50% to 20% and even lower (Wertheim's is 8.7%). The former 10% of cures today has risen to 20%.

It is seriously to be doubted, however, whether much more can be looked for in the operative field. The technique of the removal of cancer by surgical means has about reached its acme. There is much that can be done, nevertheless, for the inoperable cases, as we have seen, and in some instances we can even hope for a cure by some of our present methods. At least, one can say that in most cases life can be prolonged and the sufferer made more comfortable.

"We have made very decided progress," says Clarke, "but measured by our hopes for the future, the results are, indeed, meagerly pathetic, and show that for every victim rescued thousands pass to death through more enduring and excruciating tortures than those suffered by the victims of the Bloody Council."

These hopes for the future though are very bright. Ehrlich states that he believes the beginning of the end is in sight. Animal experimentation has added great impetus to cancer research and it seems reasonable to assume that in this field will occur the brilliant results of the future. The material for experiment is abundant, as cancer occurs widely throughout the entire animal kingdom, in the herbivora and the carnivora, in birds and fishes, quite regardless of habit or mode of living.

At the present time the greatest hope for a permanent cure lies in early diagnosis and to this end the public must be educated as they have been in the subject of tuberculosis.

Finally, in the light of our present knowledge, there are certain very definite facts which one can apply in the prophylaxis of cancer. The baneful effects of gastro-intestinal toxins on the tissues are well known and their relationship to the origin of cancer is a possibility. Dietetic errors should, therefore, as far as possible, be avoided. All of the so-called pre-

cancerous conditions should be observed with watchful care in those of cancerous age. Bad cervical laceration should be repaired. Pruritus valvæ receive vigorous treatment and be watched with care. Leg ulcers should not be neglected. Irritated moles and warts, eczema, scars, sebaceous cysts, gastric ulcer, anal fissure and ulcer of the rectum, chronic appendicitis, papillomata of the bladder, gallstones, diverticula of the colon, hypertrophied prostate, thyroid tumors, uterine fibroids and breast tumors may all, by reason of being subjected to chronic irritation develop into cancer, and should, therefore be looked upon with caution and the appropriate medical and surgical intervention not delayed.

Until the "Bloody Moloch" has given up his secret his devastations may be and must be reduced by these measures.

ANNUAL ORATION

JOHN HILL TUCKER, M.D., CHARLOTTE.

Several weeks ago when the realization of the fact dawned upon me that the time was near when I should have, as their annual orator, the conspicuous honor of addressing the North Carolina Medical Society, I was filled with misgivings and fears of my unpreparedness for such a task. However, I could have had no greater awakening of spirit and imagination than I found on reaching this city two days ago. In fact I am made to wonder if Charlotte is the Queen City of the State.

Your lovely city nestled in the mountains with its sublimely beautiful environments is as enchanting and restful as the heart could desire or the mind long for.

Tonight as I look upon this splendid gathering of noble men and lovely women and ask the question, what is the object of this annual assemblage? The answer comes back, For the advancement of the science of medicine.

I am thrilled beyond expression, frankly so nearly beyond expression, I fear I cannot even under such inspiration, rise to the level of my desire to speak worthily on the subject I have selected for your consideration. Realizing that I have the honor of addressing a great and truly representative body of that learned profession whose career began in the twilight of fable, long before authentic history had lifted the curtain of time. A profession struggling ever onward and upward until today its influence and power for good irradiates the earth.

What—what shall my subject be? I have considered and discarded many fascinating topics, some of them no doubt have suggested themselves to your minds, and instead I have

chosen one, at the risk of being censured as immodest, which comprehends them all.

The simple truth will be sufficient to emphasize the fact that our present state of civilization offers no more useful, unselfish nor heroic figure than "The Doctor," and it is to a brief study of the doctor that I now invite your attention. Who is the doctor? Are there doctors who are only doctors in name? What is expected of the doctor? What has the doctor done to bring our civilization to its present state of advancement?

It would be unbecoming on this occasion to resort to an invidious comparison of the professions, for each in its own way has added much towards the completion of man's remarkable conquest of the earth, the air and all that therein is. Indeed it would be interesting to follow Herbert Spencer into a review of "the evolution of the profession," but time forbids such a digression from the immediate subject.

It was the great Aristotle who said, "Whoever sees things grow from the origin, will appreciate their nature and beauty," therefore it would seem necessary for a full appreciation of what the medical profesion was, what it is and what it always will be, to have a working knowledge of her past history. What would you think of a lawyer who knew nothing of Justinian or of the glorious past record of his legal brethren, who century by century have taught mankind to know and respect the majesty of the law?

Often the Temple of Justice seems to medical men to be diverted to the protection of quacks and charlatans rather than the needs of the sick, although pitying the wisdom of such lawmakers, we, as physicians are found first among men to obey the decree of the court.

Of the six learned professions, the Minister, the Military Man, the Lawyer, the Teacher, the Journalist and the Doctor, standing as the six pillars of our modern civilization, what a

luminous volume in this record of human achievements would be that entitled "Medical Achievements."

Emerging from the mists of fable, the doctor began his career in the land of the Pharoahs more than forty centuries ago. Battling with ignorance and superstition in those days with the same determination that we find him today.

He advanced somewhat in Greece when a skilled priesthood taught and practiced medicine. We follow the profession through the days of Esculapius and Hygieia (presumably the first female doctor), to Hippocrates, the great teacher of medicine, barring the Christian ministry because of its divine origin.

Can there be found in any other profession such a rich legacy of noble unselfish love as that handed down through the centuries in the oath of Hippocrates? It should be in this day, as then, the confession of faith of all true physicians.

Think of our ancient brethren centuries ago subscribing to such sentiments—"To regard him who teaches this art equally with my parents, to share my substance and if he be in need to relieve his necessities, and to teach his art if they wish to learn it, without fee or stipulation.

"With purity and holiness will I watch closely my life and art. Into whatever houses I shall enter, I will go to the sick, abstaining from every voluntary act of injustice and corruption and lasciviousness with women or men—free or slave. While I keep this, my oath, inviolate and unbroken, may it be granted to me to enjoy life and my art, forever honored of all men; but should I by transgression violate it, be mine the reverse."

Well may we be proud of our fathers in the faith, for loftier sentiments never fell from human lips. From Hippocrates to Celsus, "The Cicero of Medicine," to Claudius Galen, who was regarded by the world infallible for more than twelve centuries.

Time warns us not to go deeply into this fascinating and almost sacred history of our ancient brethren, yet is it not true that some there be who assume the title of doctor and pursue it with as little appreciation of its purpose and grandeur and with as little dignity and recognition of its import as if they were embarking upon some questionable business enterprise born of this intensely commercial generation? So recent seem many of today's methods used in medicine and surgery, we are apt to lose sight of the fact that the profession is an ancient institution and to passed and passing generations we owe a service of gratitude, which only knowledge of and reverence for the past can ever hope to pay.

From Greece by way of Alexandria on to Rome was carried by faithful hands the torch of medicine.

With the fall of Imperial Rome those true disciples of science, the Arabians, kept burning the lamp of rational medicine. In the dark ages medicine passed through the night of despair, only to have the light of truth more clearly revealed in the early days of our present school of medicine.

If indeed it was possible to trace our knowledge of the origin of medicine only to the 16th century, there would be a just and right pride in the nobility of the men who have made modern medicine what it is. Not a nobility of pomp and show and meaningless pageants, but rather of human record of lives of purity of purpose and unselfish service to others, which challenges and receives the admiration of all men. I shall not weary you tonight with the impossible task of even briefly recalling to your minds the immortal names of those men who have done so much for all the world, and particularly medical men.

It is unjust, if not unkind, to the memory of the dead to boast of the marvelous achievements of modern medicine. The men who have given to the world their lives, their labors and their success in medicine, were not in the past, as they

are not today, vain boasters, seeking the applause of men; but rather modest workers in the cause of humanity "Preferring perfects in their works before riches, and a clean conscience before earthly honors."

To substantiate such an assertion, look this world over from sea to sea, from land to land, and there will loom up before your wandering gaze a thousand monuments to military men to one monument to honor the earthly memory of the world's real benefactors. May I ask which was the greater boon to mankind, the sea of mingled blood and tears which drenched all Europe as a natural result of the Napoleonic wars, or the sleep that steals over the agonized bodies and the pains are soothed, by Simpson's discovery of chloroform?

It would be an unpardonable shock and offence to our present notions of education, if the young minds of our land were not told in song and story of those vandals of blood and iron—Bismarck and Napoleon. How seldom are they ever told of the lives and works of Rudolph Virchow and Louis Pasteur. The influence for good or bad wielded by Bismarck and Napoleon extended perhaps over a continent, where the works of Virchow and Pasteur have hepled all the world.

The Science of Medicine is not bound by creeds nor continents; it is international, its aim is man and its beneficent influence extends wherever he is found.

It was the great Virchow who said: "The true physicians are the natural attorneys of the poor," and our own great Jacobi warns the graduate doctor who is entering a hospital for additional study and knowledge, to remember he is entering a temple at whose door he will leave behind him selfish motives. He will give the same time and attention to the poor that he bestows on those outside, when he looks for knowledge, he will do so without making the patient recognize it is a means to an end. He never forgets that the poor in a hospital, cut off from the world, has no one to rely upon but his

doctor, and his soul goes out to those who suffer most. Many of those who greet us with hungry looks are dying.

A few days ago in my home city of Charlotte, I heard an eminent scholar and jurist casually remark: "What a lesson to man was the Titanic's fate, how much can and will be learned from that fearful tragedy of the High Seas." On that somber occasion, when all around was chaos and ruin, and for a moment the crew seemed confused, there was condensed in a single sentence more than a thousand years of English history, when down through the cold air of that starlit night, borne on the wings of the megaphone, came this command from the bridge of the ill fated vessel, which an hour later on that clear, cold night, would start with her Captain and sixteen hundred souls on the last two miles of her journey to the bottom of a Northern sea: "Men be British," "Men be British." My, what a fervent reminder of Brittania's rule of the sea, more than a thousand years of the gallantry and heroism of old England's sailors was called to each true British heart, and a midnight grave in icy waters was preferred to dishonor.

My friends this all too brief and inaccurate reference to our past benefactors in medicine should bear to our minds tonight and forever, what a glorious record the profession we represent in this State today has always maintained in the past. When we hear our standard of rules and etiquette ridiculed by others, maybe our best friends, we can be assured no patient was ever harmed by the attendant or consultant behaving like they are or should be, gentlemen. The lay mind cannot always understand things medical, and it is depressing at times to hear the criticism of those who should feel differently about them, our patients. I sometimes feel if only a small part of the avowed sympathy of certain doctors for their prospective patients was given to their struggling brother physicians all parties in question would be better off and happier; although these, and like ills, we can bear if we will only stop

when thus annoyed and recall what is our heritage from the past and who we are today.

It is said at the most critical moment in Washington's administrations, he was slandered and bitterly assailed by his political opponents, and it was at that hour the immortal Washington said to an intimate friend: "The point is not what others think of Washington, but what Washington thinks of himself." Therefore, let us keep our own professional robes ethically clean and be able at all times to acquit ourselves after a searching trial at the bar of our own conscience.

Now this disjointed discussion of "The Doctor," in which you have so patiently borne with me, will miss its real mark if in concluding this claim of professional respectability, and the boundless mercy and good, medicine, through medical men has wrought in the State, the nation, and the world, there is not offered a just plea for a universally high standard of education, morally, mentally and physically, of the men who are to bear the great responsibilities assumed with the title of "doctor." Much is required of the medical man of today, and more will be required of him tomorrow.

In our great, strong, and democratic America, where men are grown vigorous and free, medicine and medical ideals should reach their highest state of development, where there are or should be no artificial upper classes nor distinction made among men, save that personal nobility created by early training, honest toil, and integrity in all things, whether dealing with the individual or the State. We are prone to judge a man by standards of money, not character, a physician by external appearance, style, social prominence, rather than his real interest in and knowledge for medicine. 'Tis true of the things of this world, that perversion of the best always makes the worst, be it in religion, medicine or business.

There is nothing on earth more of Heaven than to see the loving trust and confidence existing between friends, nothing

more vile and debased than to witness that trust and confidence betrayed for a few paltry dollars. There is no nobler profession than that whose true purpose is to lessen disease and relieve pain, none more perverted when human diseases and sorrows are converted into speculative commodities and manipulated according to the credulity of the afflicted for selfish gain.

That the ancients tried to make medicine a science or art and failed, and we of today are trying to make it a trade or business and are succeeding, is not true and never will be true. The argument of the hardship to poor young men of securing a college degree before entering upon the study of medicine, is flimsy and will not bear the slightest scrutiny, for if he has not the time, the courage nor the ability to reach the hall of medicine through the right channel, he certainly has not the proper stuff to make a doctor. Can you in fancy picture a more forlorn sight than a shabbily prepared, ignorant man, be he young or old, leaving a commercial medical school with a diploma? 'Tis too often the beginning of a life of deception, sorrow, disappointment and perhaps dishonor before the end. Too often the blame of such a melancholy medical career is not justly divided between the man and the school he goes out into the world to represent. It is true that good and great physicians start life with poorer opportunities from indifferent medical schools, but in every such case, we will find upon investigation, the man in question is endowed with natural gifts and studious habits which will win anywhere in spite of poor opportunities and many obstacles.

The contrary to the above proposition is equally true that the best medical schools with the highest requirements for entrance at times award diplomas to base and dangerous men in medicine. Fortunately or unfortunately, as one may view it, the first instance of a good man from a bad school of low standards, is a living, breathing dividend, paying asset of

untold face value to his school; whereas, the bad man from the good school of unexcelled opportunities, is but a bad account, and transferred to the other side of the ledger, charged to the account of caution and experience, and goes to show that two thousand years of the Christian dispensation is not long enough to separate the few bad men from the many good and great men and women in the world.

The time is not quite ripe to tear down our prison walls and convert them into playgrounds for little children; but now is the time to help in every way possible those who are leading in the cause of high and higher requirements for medical education. Now is the record making time to teach our people there is nothing cheap about good medicine and surgery, and they are a hallowed union of the two integral parts of one great profession, and should never be divorced even in the equivalent of fees, for when medicine and surgery are separated and an attempt made to commercialize one or the other, they both are cheapened and the result is unchristianlike and not lasting. The shrewdest crook in all the world cannot long thrive on high prices and cheap stock, nor can the prince of merchants endure with valuable and necessary articles sold below cost. While he is living he may be called a philanthropist, but that meager praise so long awarded a patient profession, does not carry on the science of medicine nor supply the necessities of life.

High and rigid requirements of education and hospital training among doctors is of vital importance to the individual and the nation. When medical education is made cheap and a medical diploma easy to get, the profession will be filled with quacks. Many of these quacks are men of wonderful personalities, and the best families may be won to believe in them and their marvelous cures, for kind and pleasant attentions can hide many an ignorant blunder in medicine and surgery.

Oliver Goldsmith wrote a page satirizing the quack, which in its logic and wit exhausts the subject. Let us read a few lines of it:

"The quack recognizes no difficulties like the professors of other sciences. He delights in the most desperate cases. He is gifted with the power of curing all ills." When I think of the quack these words always come to my mind: "Of all thieves fools are the worst; they rob you of time and temper."

There is still another ill to which the medical profession is subjected, and against which the doctor has to battle all his life, it is the miserable, cruel, unreasonable and unprofessional spirit of jealousy and envy. I do not refer to that commendable spirit of being jealous of one's rights, for it is a healthy professional sign when medical men are jealous of rude and ignorant intrusion upon that which is their own; but rather do I refer to that envious feeling which cherishes ill towards another because of his superior training, possessions, skill or the like. It is this envious spirit which creeps through the profession like some poisonous plant clings to the body of the majestic oak, marring its beauty, and finally distilling a lurking death to the tree that has sheltered it from sun and storm.

I say it with regret, but I think you will agree with me when I say that this spirit of envy and jealousy prevails to a greater extent in our profession than in others.

What is the remedy? What power will hew down this upas? The answer is easy. A constant observance of the golden rule and education of doctors, nine-tenths of all the envy and jealousy in the medical profession is ignorance—selfishness. Truly has it been said, "Ignorance is the rust of the soul."

This is not the time nor the place to say how high the standard of educational requirements should be for entrance into medical colleges; but I am sure we, as medical representatives of this great commonwealth of North Carolina, with more

than two millions of as uncontaminated American citizenship as can be found on the continent, will agree that our State is entitled to at least one medical school, and the requirements for entrance to that as high as is consistent with our ideals of medicine, remembering it is not always the body, but the man who calls out to the physician for help as they travel side by side along the road of life.

In words from the sweet poem of James Fisher:

"Let me live in my house by the side of the road
Where the race of men go by—
They are good, they are bad, they are weak, they are strong,
Wise, foolish—so am I—
Then why should I sit in the scorner's seat
Or hurl the cynic's ban?
Let me live in my house by the side of the road
And be a friend to man."

We have neglected a large class of our best patients and allowed them to drift into the hands of every manner of fakir under the sun because of failure in the education and training of medical men along the lines of suggestive therapeutics.

For suggestion and advice to the sick are only made effective by a high standard of culture and training of the men who are to be our future physicians.

When a community is blest with a medical fraternity of courage, education and ability, you will find as a rule a most desirable class of patients. More specifically speaking when you find a family who has a physician who in addition to natural gifts has education and is a student of human nature, you infrequently hear of members of that family consulting and singing the praises of Christian Scientists, or running from one specialist to another without results, some perhaps to embarrass financially the anxious ones who seek to give their loved ones relief. No, my friends, where medical standards are high, and medical men well trained, there is no excuse for the gullibility of the public. We shall safely rely on the

sound judgment of our patients to differentiate between the sham and the real. Between the man who charges a just fee, though necessarily a large one for valuable services rendered, and the unprincipled extortioner who by glittering instruments and mysterious surroundings robs you of your money, and worse still precious time which may be your lost opportunity of ever getting well.

UTERINE HEMORRHAGE A SYMPTOM FREQUENTLY SEEN IN PELLAGRA OF WOMEN.

C. H. Peele, M.D., Warrenton.

In view of the lack of definite knowledge as to the cause of pellagra it would seem desirable that all symptoms should be noted. It is possible that some symptom, on which, so far, but little stress has been laid, may be found to contain some clue essential in laying bare the causal agent. The result of tabulation in relation to symptoms of disease may often be very misleading. Each case shows the accentuation of some symptom which in other cases may be very mildly prominent. But in a series of cases—and the greater the number, the more accurate the deductions—the symptoms most prominent in a majority of cases we may say should be looked for in studying such a disease. The general symptomatology of pellagra has been keenly observed and described, and all of us are now familiar with the picture that a few years ago was so puzzling. In asking your attention to a symptom in some of the cases I am reporting to you, I do so with the desire to aid, if possible, in making an early diagnosis of this dread ailment. I shall not detail these cases, but I will call attention to the leading symptoms. In the first cases I was struck by one feature that occurred very early and very prominently, and thereafter I have always looked for it in pellagra. This was the marked uterine bleeding.

Case 1, was a negro woman about 25 years old, seen in July, 1907. She then had the pathognomonic symptoms, but she complained bitterly of the severe uterine bleeding that had existed for several months. She stated that before she was sick any other way her menstruation had become excessive, and that then the bleeding became irregular, with periods of

three or four days to a week of bold flow, followed by an interval of no bleeding, after which the flow would start again. The flow was described as being of an amount like an abortion, but it had few clots. It was sometimes bright red, and sometimes sero-sanguinous. She said there was no pain with the flow. The uterus was small and rather hard, and was not tender. At that time there was profuse bleeding, which was a bright red color; this continued for some days and ceased. A few weeks later she began to pass blood from her bowels, and she shortly afterwards set up a peritonitis from which she died.

Case 2, was a negro woman about 23 years old, seen in February, 1908, for excessive menstrual flow. She was married; she had been always healthy; she had no children; there had been no miscarriage, nor any menstrual irregularity up to the previous six or seven months. Since then the flow had been so great as to prostrate her, and she had to keep her bed for about two weeks out of every month. The bleeding lasted from seven to ten days, and was characterized by the passing of quantities of clots. She was at that time exceedingly weak, and had to be helped to turn about in bed. Her pulse was above 100, and very feeble, and she had a mitral murmur. The uterus was small, firm, and not sensitive. There was no pain with the flow. No treatment affected the flow, and in a short time it became irregular, and was so exhausting that the woman was bedridden. The wrists now became indurated, and her death occurred suddenly.

Case 3, was a white woman of high social standing, seen in May, 1908. She was married and had borne five or six children. She was 46 years old, and had been generally healthy, but had always been very nervous. Beginning as increased and prolonged menstruation for several months, she suffered periods of vicious bleeding that resisted all means used to check it. This flow was irregular in its appearance, and its

continuance. The hemorrhages covered about three months. At first it was thought to be some manifestation of the menopause, but later it was decided to be carcinoma, and that her condition would not permit a hysterectomy. Afterwards she became my patient. She was very weak, very anæmic, exceedingly nervous, well nigh sleepless, and suffered hallucinations. The bleeding had about ceased, there being a slight leucorrhoea, and this was relieved by a douche. Under rest and forced feeding she gained strength and appetite and was able to sit up and to walk about some. Examination of the uterus disclosed a small and rather fibrous organ that was movable. The cervix was not eroded, nor was the body enlarged. She complained of severe pain in the uterus, and especially of a pain extending down towards the rectum, which was normal. In the fall she had some intractable diarrhœa, and her mouth had a scalded feel. In December the typical efflorescence appeared on the wrists, and there was an ugly dermatitis of the genitals that was characterized by much itching. This all passed away after a time, and she became better. The following spring she suffered great recto-uterine pain, and examination showed the uterus to be small, fibrous, and movable. She now became insane, and died soon afterwards. There was never any recurrence of the uterine hemorrhage.

Case 4, was a white woman of 23, seen in May, 1908. Her history was negative, except that recently she had been feeling "run down." I was called during the night for a vicious uterine hemorrhage that had occurred during her sleep without warning. Her menstrual history was good, and there had been no irregularity. Her period had occurred the past week, and was normal. I found her bed and clothing flooded. There was a peculiar sweetish and sickening smell present. While free, the discharge was rather sero-sanguinous, and was very little clotted. Examination was very difficult because of the smallness and sensitiveness of the vagina. The uterus

was slightly sensitive, but was not enlarged. Curettement was advised, but was denied; so the vagina was packed. The patient then had a temperature over 100, and she was quite weak and much frightened. She had some pain with the occurrence of the flow, but there had been no cramp pains. I carefully examined all the discharge and the clothing, which had not been removed, for evidence of fœtal remains, but found none. When the packing was removed the sweetish odor was marked, but the bleeding was very little and it steadily diminished until it ceased in about four days. Her general weakness was striking, and was out of proportion to the amount of blood lost, and she was very white. Two weeks later she had a similar attack of bleeding. This ceased also, and when she was stronger she was referred to a prominent gynæcologist who reported that he found no abnormality of the uterus of appendages. About a month later she exhibited a typical efflorescence of both wrists. Luckily for her she became strong and well, and has since married. In these last two cases the anæmia was striking, and showed a pearly whiteness that differed from the tint of ordinary anæmia.

Case 5, was a negro woman of about 38, whom I saw in 1910. She came because of great weakness, profuse menstruation, and a "breaking out" of her hands. This eruption was typical. She said that menstruation was a hemorrhage, lasting a week or ten days, and was so exhausting that she could not get out of bed. This excessive flow came on six months before the eruption appeared on her wrists; and the flow had gotten progressively worse. She was emotional, and her mentality was impaired. The uterus was not examined. I have no subsequent knowledge of her.

Case 6, was a white woman of 47, seen in 1910. She had been ill for two years, and was practically in extremis. Her chief symptoms were great diarrhœa, the typical eruption,

and agonizing pain in her abdomen and legs. She had had no menstrual disorders.

Case 7, was a white woman seen in 1910. She was about 46, and was insane. There had been no menstrual symptoms in her case. Her cutaneous involvement was horrible, and death was a relief.

Case 8, was a white woman of 40, seen in March of this year. She complained of a lump that moved about in her abdomen, and that she was weak and "run down," and that she thought she was approaching the menopause, because since last November her menses had been very profuse and much prolonged. The lump was a movable kidney, and her weakness was taken as a result of nursing a big ten months' old baby and doing her own housework. She also complained of great nervousness and of feeling scared all the time. The middle of May I again saw her. She had lost much flesh and was more nervous; she worried about everything, and had mild hallucinations. Her last two periods had been more profuse than ever. Then she showed her hands, which she thought were sunburned. The eruption was pathognomonic, and had been present for two weeks.

I do not claim originality in these observations of uterine bleeding in pellagra. I was struck very forcibly, however, by the occurence of this very noticeable bleeding, which usually was hemorrhagic, before the appearance of pathognomonic signs, and I thought it worth while to emphasize the fact so that we may consider the possibility of this disease in cases of vague uterine bleeding.

STRANGULATED HERNIA, WITH REPORT OF CASES.

Dr. J. H. Harper, Snow Hill.

In preparing this paper we have considered the subject from the position of the General Practioner in a country district, not from the standpoint of the skilled surgeon operating in a hospital, with all of its advantages. We have dealt more particularly with the preparations for the operation amid the surroundings in the home of the average country negro, or the poorer class of white people. We have not attempted to describe the operation itself in detail, as this is more thoroughly explained in the text-books.

There are two classes of patients upon whom the General Practitioner is called to perform major operations in the patient's own home, without any assistance from the experienced surgeon or the advantage of hospital surroundings. The first of these two classes are those emergency cases from accident, or disease in which you are satisfied that the prognosis is better to operate at once in the patient's own home, with poor surroundings, than to have him suffer the necessary delay in summoning an experienced surgeon, or to suffer the shock attendant on removal to a hospital, even if it be near the patient's home. The second class of cases are those who from ignorance or prejudice refuse to go to a hospital or accept operative measures unless to be done in his own home by his own family physician.

The preparations for operation which we used were very crude, but were adapted to the conditions present, and can be applied in the poorest homes in all similar cases or in emergencies in the homes of wealthier patients.

On arriving at the home of patient, water is put on to boil. In this are placed as many towels as you are likely to need. Necessary instruments are put on to boil in sterilizing pan. usually carried in instrument cases. Hands are prepared by scrubbing with ethereal soap, hot water, then strong bichloride solution. All available bowls and pitchers are cleaned with soap and water, bichloride solution then with boiling water. One large pitcher is filled with boiling water and set aside to furnish cool sterile water.

Patient is prepared for the operation by washing parts with ethereal soap and shaving. Leaving field of operation covered with pad, soaked in bichloride solution. We do not attempt to clean patient's room, and try to disturb dust as little as possible.

Patient is anesthetized, using the smallest amount of chloroform, as we believe that the shock is less than if a local anesthetic alone were used. If patient is operated on in his bed, we use a Kelly Pad under his hips to protect bed. Field of operation is again washed with ethereal soap and hot water, then surrounded by sterile towels wrung out of the boiling water.

Incision is made as for Bassini operation. Operate as rapidly as you can, and stop anesthetic as soon as deep sutures are placed, skin sutures are introduced and a small gauze drain left in the lower angle of the wound for forty-eight hours. Our after treatment consisted in withholding everything by mouth for six hours, except small sips of water and strychnine for stimulation. The only doses of strychnine given hypodermically were immediately after operation, and when the patient was visited by attending physician. We give stimulating enemas of coffee, whiskey, and salt solution, every three hours. After six hours, we precede these nutrient enemas by high injections of warm soapsuds and turpentine, in an

attempt to move bowels and relieve distension. As soon as bowels are moved, we give nourishment by mouth.

Case 1. F. G.; white; male; age, 66; occupation, farming. Had had a small hernia for three months. Did not wear a truss. On June 9, 1908, was pulling a wire out of ground when rupture suddenly came down much larger than ever before. This gave him very acute pain. He went to bed and immediately began to be troubled with nausea, vomiting, and all the classical symptoms of strangulated hernia. He called a physician in afternoon of June 10, who diagnosed condition, and advised removal to a hospital and operation. This was refused, and he would agree to no operation unless performed in his own home. We saw the case on June 11, and at this time he was in poor condition for operation. The operation was done as soon as we could get ready. We found the strangulated bowel very dark, but returned it. The omentum contained in hernia sac was so nearly gangrenous that it was ligated and removed. We did a Bassini operation as nearly correct as we could without assistance. Patient did not vomit any more. Bowels moved next day. He made an uneventful recovery. Has had no recurrence and is able to do his farm work. We have him wear a truss still, to prevent recurrence.

Case 2. A. J.; negro; male; age, 67; farmer. Had been ruptured as far back as he could remember. Had worn a truss forty years.

On July 21, 1909, in going up a step rupture came down suddenly and he was unable to reduce it, as he had always been able to do before. I was called to see him and could not reduce the hernia. No symptoms of strangulation. I advised removal to a hospital and operation; this he steadily refused. Symptoms of strangulation came on during night of July 22, and next morning patient sent for us to do what we could for him, but would not stand for operation by anyone else. In this case we used a tobacco truck for an operating table. At

operation we found a large congenital hernia containing bowel and omentum, the latter adherent to bottom of sac. The lower portion of sac was cut off and closed to form Tunica Vaginalis, and the hernia reduced. Patient made a rapid recovery. Was out of doors in three weeks. Still wears a truss, but has had no recurrence. He developed soon after operation, a large hydrocele, probably, from the attempt to provide a Tunica Vaginalis.

Case 3. Martin M.; negro; age, 5. Congenital hernia, which had been down frequently all his life, but was always easily reduced. On May 16, 1910, hernia came down while he was playing in the yard. Gave him a great deal of pain; became very hard. When seen by a physician, he had all symptoms of strangulation. Operation was performed within eight hours. Bowels showed some duskiness and purple discoloration. Patient recovered promptly, and has had no recurrence.

Case 4. S. L.; negro; male; age, 61. Had been ruptured three years. Wore a truss until one year ago. Rupture came down occasionally, but he could always reduce it. Rupture came down on January 15, and he could not replace it. Symptoms of strangulation came on January 17. He called a physician a day and a half later, who diagnosed condition, called us and we did the operation immediately. This patient's condition was so serious that we thought he might die during operation. We closed the wound very hurriedly, not attempting to do much towards a radical cure of the hernia as we disliked to have the patient die during operation, and thought this was going to take place if we consumed much more time. This patient was delirious for a week. Finally recovered. There is at this time a slight bulging at site of old hernia, and we have advised him to wear a truss.

These are very few cases from which to draw any definite conclusions, but we believe that operating under the existing

conditions, without assistance or previous experience that tne recovery of these patients must be attributed to the fact that they were moved as little as possible, and that there was no delay in making elaborate preparations for operation. We think that in every case where possible, that an experienced surgeon should be called if it does not cause any added delay. We believe that in cases of strangulated hernia, occurring in very old people, that the prognosis is much better if the operation is performed at once in the patient's own home, even if it must be done by an inexperienced operator. Even better we would say, than if he is removed to a hospital, with the additional shock caused by the removal and delay; and the operation performed by a skillful surgeon with the best assistants.

Members of the Component County Medical Societies of the Medical Society of the State of North Carolina, June, 1911

ALAMANCE COUNTY SOCIETY.

Members and Address.	*Licensed.*	*Joined State Society.*
President, L. A. Walker, Burlington Univ. Coll. Med., Va.	1899	1904
Secretary, W. D. Moser, Burlington	——	——
Faucette, T. S., Burlington Balto. Med. Coll., 1893.	1893	1896
Stafford, G. W., Burlington Bellevue, N. Y., 1871.	1879	1890
Galey, W. R., Graham Coll. P. & S., Balto., 1885.	1885	1893
Long, G. W., Graham Univ. Pa., 1877.	1877	1877
Walker, W. E., Graham Med. Coll. Va., 1903.	1903	1905
Pickett, J. A., Burlington Univ. Nashville.	1894	1904
Walters, C. M., Burlington	——	——
Tyson, T. D., Mebane	——	——
McPherson, Chas., Burlington	——	——

ANSON COUNTY SOCIETY.

President, J. H. Bennett, Wadesboro Univ. of Md., 1894.	1894	1912
Secretary, J. E. Hart, Wadesboro Univ. of Md., 1897.	1897	1912
Ross, R. D., Wadesboro Univ. of N. Y., 1890.	1890	1912
Covington, J. M., Jr., Wadesboro Medico Chir., Phila., 1899.	1899	1912
Dunlap, J. M., Ansonville Univ. of N. Y., 1876.	1876	1912
Thompson, Dunlop, Morvin Univ. of Md., 1904.	1904	1912
Misenheimer, T. F., Morvin Univ. N. Y., 1880.	1881	1881

AVERY COUNTY SOCIETY.

President, T. J. Proffitt, Elk Park Louisville Med. Coll., 1902.	1903	——
Secretary, Mary Martin Sloop, Crissmore Woman's Med. Coll. of Pa., 1906.	1906	——
Tate, W. C., Banner Elk Tenn. Med. Coll., 1908.	1909	1912
Hodges, J. M., Cranberry Balto. Med. Coll., 1906.	1906	——

Members and Address.	*Licensed.*	*Joined State Society.*
Sutton, J. R., Elk Park Univ. of South, 1904.	1909	——
Sloop, E. H., Crossnore N. C. Med. Coll., 1905, Jeff. Med. Coll., 1908.	1905	1909

BERTIE COUNTY SOCIETY.

Secretary, Jno. L. Pritchard, Windsor, N. C. C. of P. & S., Balto., 1906.	1906	1907
Sawyer, C. J., Windsor	——	——

BEAUFORT COUNTY SOCIETY.

Secretary, W. T. Potter, Aurora Med. Coll. Va., 1910.	1910	1910
Kafer, Oswald, Edward	——	——
Rodman, Jno. C., Washington Bellevue Med. Coll., 1892.	1892	1895
Blount, Jno. G., Washington Bellevue Med. Coll., 1892.	1892	1893
Nicholson, J. T., Bath P. & S., Balto., 1885.	1885	1904
Staley, S. W., Aurora Med. Coll. S. C., 1901.	1901	1904
Hunter, H. H., Pinetown Med. Coll. Va., 1900.	1901	1904
Kellum, W. D., Union P. & S., Balto., 1880.	1887	1904
Small, W. P., Washington Univ. N. Y., 1875.	——	1905
Credel, E. S., Pantego	——	——
Jackson, C. C., Yeatesville	——	——
Winley, C. T., Belhaven	——	——
Carter, H. W., Washington	——	——
Hoyt, A. C., Washington	——	——

BLADEN COUNTY SOCIETY.

President, Geo. S. Clark, Clarkton Univ. N. Y., 1876.	——	1904
Secretary, N. P. Liles, Elizabethtown	——	——
Robinson, Newton, Elizabethtown Univ. Pa., 1869.	——	1904
Evans, L. B., Clarkton Univ. Coll. Med., 1900.	1900	1904

BRUNSWICK COUNTY SOCIETY.

President, E. G. Goodman, El Paso Univ. Med, 1891.	1891	1892
Secretary, J. Arthur Dosher, Southport Balto. Med. Coll., 1903.	1903	1903

BUNCOMBE COUNTY SOCIETY.

President, H. H. Briggs, Asheville Yale Univ., 1897.	1901	1903

Members and Address.	*Licensed.*	*Joined State Society.*
Secretary, G. S. Tennent, Asheville	——	——
Ambler, C. P., Asheville	1890	1891
West Reserve Univ., Ohio, 1889.		
Anderson, J. G., Asheville	1907	1908
Univ. N. C., 1906.		
Archer, I. J., Black Mountain	1905	1906
Northwest Univ., 1896.		
Ballard, A. M., Asheville	——	——
Battle, S. W., Asheville	——	1887
Bellevue, N. Y., 1875.		
Brookshire, H. G., Leicester	——	——
Brownson, W. C., Asheville	——	——
Buckner, J. M., Swannanoa	1909	1912
U. N. C., 1908.		
Buckner, R. G., Asheville	1907	1908
Arkansas Univ., 1897.		
Calloway, A. W., Asheville	1899	1904
Chi Homeop. Med. Coll., 1875.		
Carroll, J. L., Asheville	1899	1904
Chi Homeop. Med. Coll., 1875.		
Carroll, R. S., Asheville	1905	1906
Rush Med. Coll., 1897.		
Cheesborough, T. P., Asheville	1891	1899
Univ. N. Y., 1891.		
Clemenger, F. J., Asheville	1903	1904
Univ. Denver, 1902.		
Clontz, W. J., Alexander	——	——
Cocke, J. E., Alexander	1905	1906
Louisv. Med. Coll., 1905.		
Colbey, C. D. W., Alexander, trans. from Jackson	——	——
Costello, M. J., Alexander	1910	——
Medico Chir., Phila., 1896.		
Cotton, C. E., Black Mountain	1901	1901
Univ. Wooster, O., 1889.		
Davis, J. C., Candler	1909	——
Atlantic School of Med., 1909.		
Dunn, W. L., Asheville	1900	1900
Univ. Mich., 1891.		
Eckel, O. F., Asheville	——	——
Elias, L. W., Asheville	1906	1906
P. & S., N. Y., 1903.		
Fletcher, M. H., Asheville	1881	1881
Bellevue Med. Coll., 1881.		
Frazer, T., Asheville	——	——
Gardner, G. D., Asheville	——	——
Gill, J. N. Weaverville	——	——
Glenn, E. B., Asheville	1896	1899
Jeff. Med., 1896.		
Greene, J. B., Asheville	1910	1911
Univ. of Va., 1893.		
Griffith, F. W., Asheville	1911	1912
Johns Hopkins, 1906.		

Members and Address.	*Licensed.*	*Joined State Society.*
Harbeck, E. V., Cleelum	1905	1912
N. C. Med. Coll., 1905.		
Harris, I. A., Alexander, R. No. 2	1880	1881
Jeff. Med. Coll.,		
Herbert, W. P., Asheville	1910	1911
Univ. Va., 1907.		
Hunnicutt, W. J., Asheville	——	——
Jordan, C. S., Asheville	1891	1899
Univ. N. Y., 1890.		
McBrayer, L. B., Asheville	1891	1899
Louisv. Med. Coll., 1889.		
McCracken, C M., Fairview	1896	1904
N. C. Med. Coll., 1896.		
Meriwether, F. T., Asheville	1888	1888
Univ. Louis., Ky., 1886.		
Merrimon, L. A., Asheville	1899	1904
Woman's Med. Coll., 1900.		
Minor, C. L., Asheville	1895	1898
Univ. Va., 1888.		
Morris, E. R., Asheville	1896	1899
Louisv. Med. Coll.		
Orr, C. C., Asheville	1904	1905
Univ. of Med., 1904.		
Orr, P. B., Asheville	1901	1904
Jeff. Med. Coll., 1901.		
Paquin, P., Asheville	1899	1899
Univ. Mo., 1887.		
Pritchard, A. T., Asheville	1905	1906
Jeff., Phila., 1905.		
Purefoy, G. W., Asheville	1884	1904
Jeff., Phila., 1876.		
Reed, C. E., Asheville	1902	1905
Jeff. Coll., 1905.		
Reeves, A. F., Asheville	1909	1910
Geo. Wash. Univ., 1906.		
Reynolds, C. V., Asheville	1895	1896
Univ. N. Y., 1895.		
Ringer, P. H., Asheville	1906	1907
P. & S., N. Y., 1904.		
Von Ruck, K., Asheville	1899	1902
Univ. Mich., 1879.		
Von Ruck, S. H., Asheville	1899	1902
Bellevue, 1899.		
Russel, E. R., Asheville	——	——
Seiver, D. E., Asheville	——	——
Seiver, J. T., Asheville	1895	1899
Jeff. Med., 1895.		
Smith, O., Asheville	1905	1906
Jeff. Med., 1905.		
Stevens, M. L., Asheville	1892	1893
Balto. Med., 1891.		
Terrell, A. J., Black Mountain	——	——

Members and Address.	*Licensed.*	*Joined State Society.*
Weaver, H. B., Asheville Wash. Univ. Med., 1872.	1881	1881
Whittington, W. P., Asheville Univ. Iowa, 1862.	1882	1882
Williams, J. H., Asheville Univ. Iowa, 1862.	1881	1881

BURKE COUNTY SOCIETY.

President, Albert Houck, Morganton P. & S. Balto., 1884.	1891	1892
Secretary, F. B. Watkins, Morganton Jefferson, 1907.	1907	1910
McCampbell, John, Morganton Balto. Med. Coll., 1894.	1895	1903
Hennessee, Emanuel A., Glen Alpine Chattanooga Med. Coll., 1900.	1902	1903
Phifer, Edward William, Morganton N. C. Med. Coll., 1902.	1902	1903
Riddle, Joseph Bennette, Morganton Vanderbilt Univ., 1898.	1904	1904
Hall, James King, Richmond, Va., Jefferson, 1904.	1906	1905
Anderson, Paul V., Richmond, Va. Univ. of Va., 1904.	1904	1906
Ross, Charles E., Morganton Univ. Md., 1889.	1889	1909
Gayle, Edward M. Morganton Univ. of Va., 1902.	1902	1910
Warlick, E. S., Morganton Vanderbilt, 1881.	1881	1903

CARTERET COUNTY SOCIETY.

President, C. L. Duncan, Beaufort Univ. of Md., 1902.	1902	1904
Secretary, W. E. Headen, Morehead City Univ. of Md., 1891.	1890	1891
Davis, George, Beaufort Kentucky School of Med., 1904.	1896	1904
George, D. S., Marshaliberg N. C. Med. Coll., 1903.	1903	1903
Bonner, K. P. B., Morehead City Med. Coll. of Va., 1905.	1905	1905
Royal, B. F., Morehead City Jeff. Med. Coll., 1909.	1909	——

CABARRUS COUNTY SOCIETY.

President, Theodore H. Pharr, Harrisburg Jeff. Med., 1875.	1881	1881
Secretary, J. E. Smoot, Concord Balto. Med. Coll., 1893.	1894	1902

Members and Address.	*Licensed.*	*Joined State Society.*
Young, R. S., Concord N. Y. Univ. Med., 1881.	1882	1882
Gouger, G. J., Tulin Univ. Med., 1891.	1891	1899
Fail, M. A., Mt. Pleasant Jeff Med., 1891.	1891	1908
Grier, S. A., Harrisburg Jeff. Med., 1879.	——	1904
McFayden, P. R., Concord Med. Coll. of Va., 1901.	1901	1904
Pemberton, W. D., Concord Univ. Med., 1887.	1887	1887
King, R. M., Concord Jeff. Med. Coll., 1903.	1903	1905
Burleyson, L. N., Concord Univ. of Med., 1891.	1891	1904
Archey, L. M., Concord P. & S., Balto., 1880.	1880	1889
Wallace, J. W., Concord N. C. Med. Coll., 1907.	1907	1908
Black, J. C., Pioneer Mills Univ. Med., 1891.	1891	1897
Caldwell, D. G., Concord Univ. Med., 1885.	1885	1885
Moose, D. G., Mt. Pleasant Univ. Md., 1907.	1907	1910
Yow, I. A. Georgeville N. C. Med. Coll., 1906.	1907	1910
Cauble, H. H., Kannapolis N. C. Med. Coll., 1907.	1907	1910
Matthews, J. M., Mt. Pleasant Univ. Tenn.	1907	1899
Lafferty, J. S., Concord Univ. Md., 1881.	1881	1890

CALDWELL COUNTY SOCIETY.

President, A. A. Kent, Lenoir Jefferson, 1885.	1885	1904
Secretary, W. P. Ivey, Lenoir Univ. Md., 1883.	1885	1891
Carter, G. H., King's Creek, R. F. D. Univ. of City of N. Y., 1877.	1887	1904
Flowers, B. G., Granite Falls, R. F. D. Not graduated.	1884	1904
McNairy, C. B., Lenoir P. & S., Balto., 1893.	1893	——
Wilson, C. L., Lenoir Chattanooga Med. Coll., 1903.	1903	——
Corpening, O. J., Granite Falls Univ. Coll. of Med., Richmond, Va., 1906.	1906	1906

Members and Address.	*Licensed.*	*Joined State Society.*
Moore, J. C., Mortimer	1906	1908
Univ. Coll. of Med., Richmond, Va., 1906.		
Goodman, A. B., Lenoir	1897	1904
N. C. Med. Coll., 1898.		
Stovie, J. G., Proctor	——	——

CASWELL COUNTY SOCIETY.

President, S. A. Malloy, Yanceyville	1898	1903
Ky. Sch. Med., 1897.		

CLEVELAND COUNTY SOCIETY.

President, T. G. Hamrick, Shelby	1895	1904
P. & S., Balto., 1895.		
Secretary, W. F. Mitchell, Shelby	1900	1904
Univ. Md., 1890.		
Grigg, W. T., Lawndale	1904	1904
Atlanta Med., 1891.		
Palmer, B. H., Shelby	1898	1904
Louisv. Med., 1896.		
Royster, S. S., Shelby	1896	1904
Tenn. Med., 1890.		
Wood, J. W., Shelby, R. F. D.	1903	1904
Aydlette, J. P., Earls	1903	1904
Univ. Ky., 1901.		
Champion, C. O., Mooresboro	1902	1904
Atlanta Med., 1887.		
Oates, George, Grover	1896	1904
Univ. Louisville, 1894.		
Lattimore, E. B., Shelby	1896	1904
Bellevue, 1898.		
McBrayer, T. E., Shelby	——	1904
Wash. Univ., 1875.		
Houser, E. A., Fallston	——	1904
Shoemaker, H., Shelby	1910	1911
Univ. Pa.		
Hunt, Dr., Casar	——	1912
Lee, L. V., Lattimore	1897	1904
Atlanta Med., 1894.		

CHEROKEE COUNTY SOCIETY.

President, B. G. Webb, Andrews	1885	1885
Louisville Med.		
Secretary, W. C. Morrow, Andrews	1909	1909
Atlanta School of Med.		
Hill, J. N., Murphy	1909	1909
Univ. of Louiv.		
Heighway, S. C., Murphy	1904	1904
Ohio Med., 1885.		
Adams, N. B., Murphy	1909	1909
Tenn. Med.		

Members and Address.	*Licensed.*	*Joined State Society.*
Meroney, B. B., Murphy	——	——
McKaig, F. G., Andrews	——	——
Herbert, F. L., Andrews	——	——
Orr, C. V., Andrews	——	——

COLUMBUS COUNTY SOCIETY.

President, H. B. Maxwell, Whiteville Univ. Med, 1902.	1902	1902
Secretary, L. Baggett, Tabor N. C. Med. Coll., 1907.	1907	1908
Crowell, W. M., Whiteville	——	——
Moore, T. V., Cronley	——	——
Withers, S. M., Chadbourn N. C. Med. Coll., 1902.	1902	1902
Smith, W. F., Chadbourn N. C. Med. Coll., 1904.	1904	1905
Blake, J. F., Chadbourn N. C. Med. Coll., 1905.	1905	1906
Northington, Jas. M., Boardman Med. Coll. Va., 1905.	1905	1909
Johnson, Floyd, Cerro Gordo Memphis Hosp. Coll. of Med., 1903.	1903	1909
Floyd, A. G., Fair Bluff Univ. Med., 1885.	——	1904
Floyd, L. D., Fair Bluff	1911	1912
Floyd, J. W., Tabor	1907	1912

CHOWAN PERQUIMANS COUNTY SOCIETY.

President, J. H. McMullan, Edenton Univ. Md., 1876.	1876	1911
Secretary, H. M. S. Cason, Edenton Univ. Md., 1899.	1899	1899
Cox, T. A., Hertford Univ. Md., 1892.	1907	1907
Hathaway, B. W., Winfall Louisville Med. Coll., 1885.	1885	1911
Smith, R. W., Hertford Univ. Md., 1895.	1895	1911

CRAVEN COUNTY SOCIETY.

President, N. M. Gibbs, New Bern Univ. Md., 1896.	1895	1907
Secretary, R. Pollock, New Bern	——	——
Duffy, R. N., New Bern Johns Hopkins, 1906.	1907	1907
Street, N. H., New Bern Univ. of N. C., 1881.	1883	1884
Patterson, J. F., New Bern Jefferson, 1906.	1906	1906
Duguid, J., Vanceboro	——	——
Primrose, R. S., New Bern Bellevue Med. Coll., 1889.	1890	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Caton, G. A., New Bern	1898	1904
Med. Coll. Va., 1898.		
Jones, R. Duval, New Bern	1897	1904
Univ. Med., 1896.		
Rhem, Joseph, New Bern	1893	1904
Bellevue Med. Coll., 1894.		
Hawes, J. S., Dover	——	——
Duffy, Francis, New Bern	1872	1872
Univ. of Va., 1872.		
Duffy, Charles, New Bern	——	——
Patrick, J. E.. New Bern	——	——

CURRITUCK COUNTY SOCIETY.

President, W. T. Griggs, Poplar Branch	1896	1901
Univ. Va., 1896.		
Secretary, Cecil Garrenton, Coinjack	1908	1910
Med. Coll. of Va., 1908.		
Maynard, J. D., Knotts Island	1908	1908
Univ. N. C., 1908.		
Mann, S. M., Moyock	1885	1904
P. & S., Balto., 1885.		

CUMBERLAND-HOKE COUNTY SOCIETY.

President, John A. McKeathan, Fayetteville	——	——
Secretary, William S. Jordan, Fayetteville	——	——
Averitt, K. G., Cedar Creek	1893	1902
Balto. Med. Coll., 1893.		
Brown, G. W., Raeford	1900	1904
Kentucky School Med., 1898.		
Bullock, T. C., Autryville	1885	1904
P. & S., Balto., 1885.		
Dickson, A. P., Raeford	——	1906
Univ. of N. Y., 1878.		
Graham, Geoge A., Raeford	——	1904
Univ. of N. Y., 1876.		
Hayes, R. B., Fayetteville	1910	1910
Univ. of Md., 1906.		
Highsmith, J. F., Fayetteville	1889	1893
Jeff. Med. Coll., 1889.		
Highsmith, S., Fayetteville	1901	1902
Louisv. Coll. Med., 1901		
Hutchinson, S. S., Hope Mills	1911	1912
N. C. Med. Coll., 1911.		
Juat, Francis, Raeford	1910	1910
Bum., Switzerland, 1884.		
Univ. of Pa., 1887.		
Lilly, J. M., Fayetteville	1903	1904
Univ. Coll. of Med., 1903.		
McGougan, J. V., Fayetteville	1893	1904
Univ. of Md., 1893.		
McKethan, D. G., Fayetteville	1899	1899
Univ. Coll. Med., 1899.		

Members and Address.	*Licensed.*	*Joined State Society.*
McNeill, J. W., Fayetteville Bellevue Hosp. Med. Coll., 1876.	——	1876
Olive, P. W., Wade P. & S., Balto., 1907.	1907	1908
Pittman, R. L., Fayetteville Jeff. Med. Coll., 1910.	1910	1912
Rose, A. S., Fayetteville Univ. Coll. Med., 1901.	1901	1904
Timmons, H. L., Fayetteville N. C. Med Coll., 1911.	1911	1912
West, T. M., Fayetteville Univ. of Med., 1908.	1910	1910
Powell, R. A., Fayetteville Univ. Coll. Med., 1907.	1907	1908

DAVIDSON COUNTY SOCIETY.

President, C. A. Julian, Thomasville Louisv. Med. Coll., 1888.	1891	1893
Vestal, W. J., Lexington P. & S., Balto., 1883.	——	1893
Hill, D. J., Lexington P. & S., Balto., 1893.	1893	1894
Clodfelter, C. M., Lexington P. & S., Balto., 1905.	1905	1906
Buchanan, E. J., Lexington Univ. Md., 1892.	1892	1900
Zimmerman, R. U., Lexington, R 4 N. C. Med. Coll., 1901.	1901	1904
Yorkley, R. V., Lexington, R. 1	——	——
Easley, P. S., Thomasville	——	——
Mock, J. H., Thomasville Med. Coll. Va., 1898.	1898	1904
Long, E. F., Wallburg, R. 1	——	——

DAVIE COUNTY SOCIETY.

President, A. B. Byerly, Cooleemee Univ. Coll. Med., Richmond, Va., 1896.	1896	1904
Secretary, W. C. Martin, Mocksville P. & S., Balto., 1888.	1888	1903
Rodwell, J. W., Mocksville P. & S., Balto., 1895.	1895	1896
Pepper, J. K., Mocksville P. & S., Balto., 1907.	1908	1908
Martin, J. F., Advance, R. F. D. N. C. Med. Coll., 1905.	1905	1908
Speas, W. P., Mocksville Univ. Coll. Med., Richmond, Va., 1911.	1911	1912

DURHAM COUNTY SOCIETY.

President, R. L. Felts, Durham Univ. Md., 1898.	1899	1908

Members and Address.	*Licensed.*	*Joined State Society.*
Secretary, L. S. Booker, Durham Univ. Coll., Va., 1908.	1910	1910
Adams, C. A., Durham P. & S., Balto., 1892.	1892	1905
Bitting, N. D., Durham Jeff., Phila.. 1907.	1907	1907
Boddie, N. P., Durham P. & S., Balto., 1883.	1883	1883
Booker, L. S., Durham Univ. Coll., Va., 1908.	1910	1910
Brooks, B. U., Durham Univ. Md., 1905.	1905	1908
Boone, W. H., Durham Univ. N. C., 1902.	1902	1904
Bowling, E. H., Durham P. & S., Balto.. 1891.	1890	1908
Boyles, A. C., Durham Univ. Balto., 1897.	1897	1897
Chatham, A., Durham Univ. Md., 1888.	1888	1888
Fassett, B. W., Durham Balto. Med., 1898.	1899	1901
Felts, R. L., Durham Univ. Md., 1898.	1899	1908
Graham, Joe, Durham Univ. Pa., 1901.	1902	1906
Hicks, C. S., Durham Univ. Md.. 1904.	1904	1904
Hicks, W. N., Durham Med. Coll. Va., 1883.	1885	1901
Holloway, R. L., W. Durham Med Coll. Va., 1893.	1893	1904
Johnson, N. M., Durham Wash. Univ. Med., 1876.	1897	1904
Jordan, A. C., Durham P. & S., Balto., 1881.	1885	1904
Manning, J. M.. Durham Bellevue Med., 1882.	1884	1891
Olive, W. W., Durham Univ. Md., 1906.	1907	1908
Pierce, S. B., Durham Bellevue Med., 1897.	1897	1897
Ross, Geo. H., E. Durham Univ. Tenn., 1899.	1899	1904
Roberson, Foy, Durham Jeff., Phila., 1909.	1909	1912
Stroud, W. A., Rougemont Univ. N. C., 1909.	1909	1911
Teague. R. J., Durham Univ. Md., 1890.	1890	1898
Woodard, C. A., Durham Univ. Va., 1904.	1904	1907

Members and Address.	*Licensed.*	*Joined State Society.*
King, M. N., Durham Univ. Md., 1898.	1910	1910
Nickols, R. E., Gorman Med. Coll. Va., 1890.	1890	1890
Lyon, E. H., Bohama Univ. Md., 1903.	1903	1912
McPherson, S. D., Durham Univ. Md., 1903.	1903	1903
Mann, T. A., Durham Univ. Md., 1903.	1903	1903

EDGECOMBE COUNTY SOCIETY.

President, J. J. Phillips, Tarboro P. & S., N. Y., 1894.	1905	1905
Secretary, S. N. Harrell, Tarboro Univ. Md., 1897.	1907	1904
Staton, L. L., Tarboro Univ. N. Y., 1870.	1870	1900
Thigpen, W. J., Tarboro Jeff. Med. Coll., 1900.	1900	1901
Green, W. W., Tarboro	——	——
Bass, S. P., Tarboro Univ. Va., 1906.	1907	1908
Mercer, W. P., Elm City, R. F. D. Univ. N. Y., 1879.	1879	1904
Wooten, A. M., Pine Top	——	——
Simpson, J. P., Conetoe	——	——
Baker, J. M., Tarboro Univ. Md., 1879.	1879	1879
Speight, R. H., Whitakers Univ. Md., 1870.	1875	1875

FORSYTH COUNTY SOCIETY.

President, S. F. Pfohl, Winston-Salem Univ. Pa., 1894.	1898	1898
Secretary, W. M. Johnson, Winston-Salem Jeff. Med. Coll., 1908.	1908	1910
Bahnson, H. T., Winston-Salem Univ. Pa., 1867.	1869	1869
Bynum, John, Winston-Salem Univ. Coll. Med., Va., 1900.	1900	1900
Carlton, R. L., Kernersville Univ. Md., 1906.	1906	1906
Craig, S. D., Winston-Salem Tulane Univ., 1908.	1908	1911
Dalton, D. N., Winston-Salem Univ. N. Y., 1881.	1885	1886
Dalton, W. N., Winston-Salem N. C. Med. Coll., 1903.	1903	1903
Davis, A. P., Winston-Salem Ky. Med. School, 1894. Geo. Wash. Univ., 1906.	1896	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Dowby, J. E., Winston-Salem Univ. Md., 1909.	1909	1909
Fearington, J. P., Winston-Salem Univ. Md., 1887.	1887	1904
Flynt, S. S., Rural Hall P. & S., Balto., 1889.	1890	1906
Gray, E. P., Winston-Salem Johns Hopkins, 1906.	1907	1908
Hammock, J. C., Walkerton P. & S., Balto., 1905.	1905	1905
Jewett, R. D., Winston-Salem Univ. Va., 1888.	1890	1890
Justice, J. T., Kernersville N. C. Med. Coll., 1904.	1904	1904
Kapp, H. H., Winston-Salem Jeff. Med. Coll., 1901.	1901	1904
Lawrence, C. S., Winston-Salem Geo. Wash. Univ., 1908.	1908	1908
Linville, A. Y., Winston-Salem Univ. N. Y., 1889.	1889	1896
Linville, W. C., Winston-Salem Univ. Md., 1903.	1903	1903
Lockett, E. A., Winston-Salem Univ. Pa., 1902.	1904	1904
Long, V. M., Winston-Salem N. C. Med. Coll., 1906.	1906	1907
Lott, H. S., Winston-Salem Univ. Ga., 1884.	1888	1888
Schallert, P. O, Winston-Salem Univ. of Illinois, 1906.	1911	1911
Spainhour, E. H., Winston-Salem Balto. Med. Coll., 1898.	1898	1898
Spencer, W. O., Winston-Salem Jeff. Med. Coll, 1891.	1891	1894
Strickland, E. F., Bethania Univ. N. Y., 1887.	1887	1903
Williams, J. D., Lewisville Vanderbilt, 1898.	1898	1898
Bynum, W. H., Germanton Univ. Coll. Med., Va, 1900.	1900	1900
Wiggins, J. C., Winston-Salem Univ. of Pa., 1911.	1911	1911

FRANKLIN COUNTY SOCIETY.

President, S. P. Burt, Louisburg P. & S., Balto., 1896.	1896	1904
Secretary, H. O. Newell, Louisburg P. & S., Balto., 1906.	1906	1906
Floyd, R. P., Louisburg, R. F. D. 1	——	——
Babbitt, E. H., Louisburg, R. F. D. 5 S. C. Med. Coll, 1878.	——	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Yarborough, R. F., Louisburg	1899	1899
Columbia Univ., D. C., 1898.		
Malone, J. E., Louisburg	——	1904
Bellevue Med., 1875.		
Harris, J. H., Franklinton	1887	1904
Bellevue Med., 1887.		
Henderson, R. B., Franklinton	1887	1904
Univ. of Md., 1887.		
Johnson, B. C., Dunn	1909	1910
Univ. of N. C., 1909.		
Perry, E. M., Louisburg	——	——
Timberlake, R. E., Youngsville	1908	1910
Jeff. Med. Coll., 1908.		

GASTON COUNTY SOCIETY.

President, Jas. W. Reid, Lowell	1909	1909
Jeff. Med. Coll., 1909.		
Secretary, Thos. C. Quickel, Gastonia	1899	1904
Tulane Univ., 1900.		
Adams, C. E., Gastonia	1885	1904
Univ. Md., 1878.		
Anders, McG., Gastonia	1902	1902
Md. Med. Coll., 1901.		
Anderson, Jas., A., McAdenville	1909	1909
Augusta Med. Coll., 1903.		
Anthony, J. E., King's Mountain	1911	1911
Univ. Tenn., 1911.		
Davis, W. W., Belmont	1885	1904
Ky. School of Med., 1875.		
Eddleman, H. M., Gastonia	1885	1904
Ky. School of Med., 1886.		
Garren, R. H., Bessemer City	1901	1904
Univ. of Nashville, 1900.		
Garrison, D. A., Gastonia	1896	1899
Louisv. Med. Coll., 1896.		
Glenn, H. F., Gastonia	1900	1904
P. & S, Atlanta, 1900.		
Glenn, L. N., Gastonia	1897	1904
Univ. of Md., 1897.		
Hall, P. B., Belmont	1903	1911
1903.		
Hood, J. S., King's Mountain	——	1911
Jenkins, J. H., Gastonia	1888	1904
Ky. Sch. of Med., 1888.		
McCombs, C. J., Stanley	1905	1908
N. C. Med. Coll., 1905.		
McCoy, T. M., Mount Holly	1906	1908
N. C. Med. Coll., 1905.		
Orr, N. A., Belmont	——	1911
Patrick, Geo. R., Lowell	1885	1904
Univ. of Md., 1879.		

Members and Address.	*Licensed.*	*Joined State Society.*
Puett, Bessie V., Dallas Woman's Med. Coll., 1909.	1909	1910
Reid, R. M., Gastonia Univ. of N. Y., 1890.	1890	1903
Rhyne, R. E., Mount Holly N. C. Med. Coll., 1907.	1907	1908
Robinson, Frank Lowell Louisv. Med. Coll., 1878.	1881	1904
Royster, T. H., Bessemer City Med. Coll. of Va., 1909.	1910	1910
Sloan, J. M., Gastonia Louisv. Med. Coll., 1891.	1891	1904
Taylor, G. W., Belmont N. C. Med Coll., 1906.	1906	1909
Wilkins, S. A., Dallas Univ. of Ky., 1902.	1903	1903
Wilson, F. G., Gastonia Univ. of Md., 1896.	1896	1899
Hunter, M. C., Huntersville P. & S., Balto., 1882.	1882	1904

GREENE COUNTY SOCIETY.

President, J. H. Harper, Snow Hill Jefferson, 1905.	1906	1906
Secretary, W. B. Murphy, Snow Hill Univ. Med. Coll., 1903.	1903	1903
Whittington, W. W., Snow Hill Louisv. Med. Coll., 1895.	1895	1897
Edwards, G. C., Hookerton Bellevue, N. Y., 1883.	1883	1883
West, A., Walstonburg Cinn. Med. Coll., 1895.	1895	1894

GRANVILLE COUNTY SOCIETY.

President, J. A. Morris, Oxford, R. F. D. 2 Vanderbilt Univ., 1893.	1893	1899
Secretary, G. T. Sikes, Grissom Univ. Md., 1884.	1884	1884
Holloway, Q. W., North Side	——	——
Hardy, P. R., Stem P. & S., Balto., 1885.	1885	1906
Booth, S. D., Oxford Med. Coll. Va., 1867.	1885	1885

GUILFORD COUNTY SOCIETY.

President, J. W. Long, Greensboro Vanderbilt Univ., 1883.	1884	1884
Secretary, Parran Jarboe, Greensboro Univ. Georgetown, 1905.	1906	1906
Ashworth, W. C., Greensboro P. & S., Balto., 1892.	1892	1911

Members and Address.	*Licensed.*	*Joined State Society.*
Alford, A. E. B., Greensboro Columbia Univ., N. Y., 1909.	1909	1897
Beal, W. P., Greensboro Jeff. Med., 1879.	1879	1879
Battle, J. T. J., Greensboro P. & S., Balto., 1884.	1884	1887
Bowman, H. P., Greensboro Univ. of Tenn., 1894.	1894	——
Banner, C. W., Greensboro Univ. of Med., 1899.	1899	1901
Burrus, J. T., High Point Grant Univ., 1898.	1898	1898
Coble, W. A., Hartshorn Jeff. Med. Coll., 1889.	1889	1907
Cole, W. F., Greensboro Johns Hopkins Univ., 1909.	1909	——
Dees, R. O., Greensboro Univ. of Md., 1906.	1906	1908
Dees, R. E., Greensboro Univ. of Md., 1906.	1906	——
Duncan, G. F., Hight Point Balto. Univ., 1898.	1898	1907
Dodson, H. H., Greensboro Med. Coll. of Va., 1882.	1885	1886
Dicks, J. V., Gibsonville Univ. of N. C., 1907.	1907	1908
Fortune, A. F., Greensboro Univ. Coll. of Med., Va., 1900.	1900	1904
Fox, M. F., Guilford College P. & S., Balto., 1884.	1884	1885
Grayson, C. S., High Point Geo. Wash. Univ., 1907.	1907	1908
Gilmer, C. S., Greensboro, R. F. D Univ. N. Y., 1891.	1891	1894
Gove, A. M., Greensboro, R. F. D Woman's Med. Coll., N. Y., 1891.	1894	1905
Harrison, Edmund, Greensboro Univ. Coll. of Med., 1896.	1900	——
Hilton, J. J., Greensboro Univ. Md., 1886.	1889	1904
Holt, W. T., McLeansville	——	1906
Jordon, G. E., Gibsonville P. & S., Balto., 1891.	1891	1904
Jones, W. M., High Point Univ. Md., 1903.	1905	1906
Knight, W. P., Greensboro Balto. Med. Coll., 1898.	1898	1898
McAnally, W. J., High Point Balto. Med. Coll., 1897.	1896	1899

Members and Address.	*Licensed.*	*Joined State Society.*
Meadows, W. J., Greensboro Med. Coll. Ala., 1894.	1899	1904
Michaux, E. R., Greensboro Univ. N. Y., 1889.	1889	1904
Moseley, C. W., Greensboro Balto. Med., 1893.	1893	1896
Miles, M. S., Greensboro Woman's Med., Cinn., O., 1898.	1904	1905
Moore, C. E. Greensboro Jeff. Med. Coll, 1907.	1909	——
Moorefield, J. L., Guilford College	——	——
McCain, H. W., High Point	——	——
Norman, G. W., Pomona Balto. Med. Coll., 1895.	1896	——
Paddison, J. R., Oak Ridge Univ. of Md., 1902.	1902	——
Reives, J. T., Greensboro	——	——
Reaves, W. P., Greensboro Univ. of South, 1903.	1905	——
Reitzel, C. E., High Point P. & S., Ga., 1902.	1902	——
Reitzel, J. R., High Point Univ. of Tenn., 1892.	1895	——
Richardson, W. J., Greensboro Jeff. Med. Coll., 1869.	1889	1904
Roberson, Charles, Greensboro L. I. Coll. Hosp., 1897.	1897	——
Ross, G. F., Greensboro Univ. of Pa., 1907.	1908	——
Stanton, D. A., High Point Vanderbilt Univ., 1887.	1887	1891
Schoonover, R. A., Greensboro Univ. of Md., 1905.	1906	1912
Spoon, O. A., Greensboro N. C. Med. Coll., 1908.	1908	——
Turner, J. P., Greensboro Univ. Md., 1896.	1897	1904
Turner, J. A., High Point Louisv. Med. Coll., 1886.	1889	1891
Tankersley, J. W. M., Greensboro Jeff. Med. Coll., 1906.	1906	1907
Williams, J. A., Greensboro Univ. of Va., 1898.	1898	1898
Williams, B. B., Greensboro Univ. of Md., 1883.	1886	——
Wilson, A. R., Greensboro Jeff. Med., 1882.	1882	1882
Whitaker, A. C., Julian Univ. of Tenn., 1903.	1903	——

Members and Address.	*Licensed.*	*Joined State Society.*
HAYWOOD COUNTY SOCIETY.		
President, R. L. Allen, Waynesville	1885	1899
Univ. Md., 1885.		
Secretary, J. Howell Way, Waynesville	1885	1887
Vanderbilt Univ., 1886.		
Able, J. F., Waynesville	1893	1899
Univ. Balto., 1892.		
Davis, F. M., Clyde	1894	1904
Vanderbilt Univ., 1894.		
McCracken, J. R., Waynesville	1902	1903
N. C. Med. Coll., 1902.		
Mease, J. H., Canton	1893	1894
Vanderbilt Univ., 1893.		
Greenwood, B. H., Waynesville	1894	1906
Balto. Med., 1893.		
Graham, W. A., Crab Tree, R. F. D.	——	1906
Vanderbilt Univ., 1 Co. Registered on oath, 1906.		
Reynolds, Thomas F.	1904	1904
N. C. Med. Coll., 1904.		
Stringfield, Thomas, Waynesville	1898	1899
Vanderbilt Univ., 1898.		
Stringfield, S. L., Waynesville	1905	1906
Jeff. Med. Coll., 1905.		
Willis, A. P., Canton	1905	1906
Univ. N. C., 1905.		
Wilson, J. E., Sonoma	——	1903
1 Co. Louisv. Med. Coll., 1876.		
Moore, J. E., Canton	1898	1899
Tenn. Med., 1899.		
McFayden, H. L., Waynesville	——	1904
Univ. N. Y., 1876.		
Russell, J. M., Canton	1911	1912
Univ. of Nashville, 1911.		
Rich, John C., Candler	1908	1908
Univ. of Nashville, 1908.		
HARNETT COUNTY SOCIETY.		
President, I. F. Hicks, Dunn	1902	1904
N. C. Med. Coll., 1902.		
Secretary, R. L. Warren, Dunn	1911	1912
Tulane Univ., 1911.		
Halford, J. W., Chalybeate Springs	1906	1906
Columbia Univ., 1906.		
Holt, W. P., Duke	1895	1901
Jeff. Med. Coll., 1895.		
Hudson, W. L., Dunn	1883	1894
Ky. Sch. Med., 1876.		
Highsmith, Charles, Dunn	1898	1898
Balto. Med. Coll, 1898.		
Smith, F., Duke, R. F. D.	1885	1904
S. C. Med. Coll., 1868.		

Members and Address.	*Licensed.*	*Joined State Society.*
Moore, F. T., Benson P. & S., Balto.	1885	1904
McKay, J. F., Buie's Creek S. C. Med. Coll., 1884.	1885	1904
Lee, S. P. J., Dunn Md. Med. Coll., 1904.	1894	1905
Utley, H. H., Benson Balto. Med. Coll., 1906.	1906	1906
Sexton, C. H., Dunn Univ. of Med., 1890.	1890	1904
McLean, J. W., Godwin N. C. Med. Coll., 1902.	1902	1902
Melvin, W. C., Linden Univ. Coll. Med., Va., 1900.	1900	1905
Arnold, L. J., Lillington N. C. Med. Coll., 1905.	1905	1906
Denning, O. L., Dunn Jeff. Med. Coll., 1889.	1889	1904
Barefoot, M. L., Dunn, R. F. D. Balto. Med. Coll., 1911.	1911	1912

HENDERSON-POLK COUNTY SOCIETY.

President, J. G. Waldrop, Hendersonville P. & S., Balto., 1876.	——	1891
Secretary, Guy E. Dixon, Hendersonville P. & S., St. Louis, 1903.	1903	1903
Kirk, W. R., Hendersonville Central Univ. of Ky., 1890.	1901	1903
Howe, W. B. W., Hendersonville S. C. Med. Coll., 1906.	1907	1908
Brown, J. S., Hendersonville Northwestern Univ., 1893.	1894	1894
Egerton, J. L., Hendersonville Univ. Md., 1877.	——	1890
Drafts, A. B., Hendersonville Univ. of Va., 1896.	1899	1903
Cranford, J. F., Hendersonville N. C. Med. Coll., 1909.	1909	1910
Morse, L. B., Hendersonville Chicago Homeopathic Coll., 1897.	1901	1908
Johnson, Lee., E. Flat Rock Jeff. Med. Coll., 1911.	1911	1912
Guerard, A. R., E. Flat Rock Bellevue Med. Coll., 1895.	1902	1905
Sumner, T. W., Fletcher Jeff. Med. Coll., 1910.	1910	1911
Greenwood, S. E., Fletcher, R. F. D. Tenn. Med. Coll., 1902.	1903	1904
Salley, E. M., Saluda Univ. Md., 1905.	1905	1906

Members and Address.	*Licensed.*	*Joined State Society.*
Hooper, J. Orville, Saluda Univ. Nash., 1908.	1908	1900
Grady, Earle, Tryon Univ. Md., 1894.	1895	1899
Lyday, W. M., Penrose P. & S., Balto., 1885.	1889	1904

HYDE COUNTY SOCIETY.

President, A. G. Harris, Fairfield Univ. S. C., 1905.	1907	1908
Secretary, R. E. Windley, Swan Quarter Univ. Md., 1903.	1904	1907
Mann, J. A., Fairfield Univ. N. Y., 1872.	——	——
Jones, E. H., Swan Quarter Washington Univ.	——	——
Swindel, W. L., Scranton Balto. Med. Coll., 1908.	1909	1909
Mann, J. E., Lake Landing Univ. Md, 1907.	1908	1908

IREDELL-ALEXANDER COUNTY SOCIETY.

President, M. R. Adams, Statesville Univ. Md., 1904.	1904	1910
Secretary, J. E. McLaughlin, Statesville Univ. Md., 1886.	1886	1886
Anderson, Thomas E., Statesville	——	——
Kluttz, E. E., Troutman Med. Coll. Va., 1884.	——	1896
Hall, E. A., Statesville, R. F. D. No. 4 Univ. of Md., 1868.	——	1904
Adams, M. R., Statesville	——	——

JOHNSTON COUNTY SOCIETY.

President, George D. Vick, Selma Jefferson, 1906.	1906	1906
Secretary, L. D. Wharton, Smithfield Tulane, 1893.	1893	1894
Coleman, G. S., Kenly Med. Coll Va., 1907.	1907	1908
Eason, Oscar, Princeton Univ. N. C., 1910.	1910	1910
Grady, J. C., Kenly P. & S., Balto., 1886.	1887	1904
Griffin, J. A., Clayton P. & S., Balto.	——	1905
Hocutt, B. A., Clayton Univ. N. C., 1906.	1906	1907
Hooks, Thel, Smithfield Med. Coll. Va., 1901.	1901	1903

Members and Address.	*Licensed.*	*Joined State Society.*
Mimms, L. A., Smithfield P. & S., Balto., 1888.	1888	1904
McLemore, G. A., Clayton Univ. N. C., 1906.	1906	1906
Parker, G. E., Benson P. & S., Balto., 1885.	——	1904
Person, J. B., Selma Med. Coll. Va., 1897.	1897	1900
Rose, A. H., Smithfield Jefferson, 1906.	1906	1906
Stanley, J. H., Four Oaks Univ. N. C., 1904.	1904	1906
Woodard, A. G., Princeton Univ. N. C., 1907.	1907	1909
Noble, R. J., Selma Ky. Sch. of Med., 1875.	1878	1878
Young, J. J., Clayton P. & S., Balto., 1896.	1896	1904
Mayerberg, Q. W., Pine Level Jefferson, 1907.	1907	1908

LENOIR COUNTY SOCIETY.

President, R. W. Wooten, Kinston, R. F. D. Univ. Va., 1870.	——	1904
Secretary, Albert D. Parrott, Kinston Univ. Coll. Med., 1906.	1906	1906
Parrott, James M., Kinston Tulane, 1895.	1895	1896
Hargrave, W. F., Kinston Univ. Md., 1901.	1901	1901
Parrott, W. T., Kinston Tulane, 1899.	1899	1901
Tull, Henry, Kinston	——	——
Denny, W. W., Pink Hill	——	——

LINCOLN COUNTY SOCIETY.

President, C. D. Thompson, Lincolnton Med. Dept. Univ. Tenn., 1901.	1901	1904
Secretary, John B. Wright, Lincolnton Univ. Coll. Med., Va.	1890	1899
Costner, G. H., Lincolnton Univ. Md., 1901.	1902	1907
Crowell, L. A., Lincolnton Balto. Med. Coll., 1892.	1892	1898
Saine, John W., Lincolnton Louisv. Med. Coll., 1891.	1891	1904
Hoover, C. H., Crouse Balto. Med. Coll., 1903.	1903	1904
Taylor, B. C., Stanley, R. F. D. Univ. Md., 1901.	1902	1907

Members and Address.	*Licensed.*	*Joined State Society.*
Gamble, J. R., Stanley	——	——
Abernathy, H. N., Denver Louisv. Med. Coll., 1894.	1894	1898
Killian, R. B., Lincolnton, R. F. D. Louisv. Med. Coll., 1885.	1885	1904
Kiser, W. C., Reepsville	——	——

LEE COUNTY SOCIETY.

President, Lynn McIver, Sanford Univ. Ky., 1901.	1902	1902
Secretary, Hughes B. Hoyle, Jonesboro N. C. Med. Coll., 1896.	1896	1903
Monroe, W. A., Sanford Univ. Md., 1886.	1886	1888
Monroe, J. P., Sanford P. & S., Balto., 1901.	1901	1901
Matthews, M. L., Cameron Univ. N. C., 1903.	1903	1904
Matthews, J. H., Vass Univ. N. C., 1907	1907	1908
McIver, E. M., Jonesboro Univ. N. C., 1908.	1908	1908
Watson, Leon, Broadway N. C. Med., 1900.	1900	1904
Rosser, R. G., Broadway N. C. Med., 1909.	1900	1904
Palmer, R. W., Gulf Louisv. Med. Coll., 1890.	1891	1891
Snipes, E. P., Jonesboro Vanderbilt Univ., 1890.	1892	1892

MARTIN COUNTY SOCIETY.

President, E. M. Long, Hamilton P. & S., Balto., 1885.	1885	1891
Secretary, William E. Warren, Williamston Nongrad., Univ. N. Y.	1893	1894
Knight, J. B. H., Williamston P. & S., Balto., 1906.	1906	1906
Rhodes, James S., Williamston Med. Coll. Va., 1906.	1906	1906
Saunders, J. H., Williamston Univ. Coll. Med., Rich., 1905.	1905	1906
Long, B. L., Hamilton Univ. Md., 1880.	——	1904
Fleming, M. I., Hamilton Jeff. Med., Phila., 1906.	1906	1906
Hargrove, R. H., Robersonville Univ. Md., 1877	1879	1879

Members and Address.	*Licensed.*	*Joined State Society.*
Williams, J. W. Everetts	1906	1906
Univ. Md., 1906.		
Smithwick, J. E., Jamesville	1897	1904
Univ. Md., 1897.		
York, H. B., Williamston	1906	1906
P. & S., Balto., 1906.		
Ward, J. E., Robersonville	1904	1904
Univ. Md., 1904.		

MADISON COUNTY SOCIETY.

President, Frank Roberts, Marshall	1892	1902
Jeff. Med. Coll., 1892.		
Secretary, C. N. Sprinkle, Marshall	——	——
Moore, J. N., Marshall	——	——
Peck, E. J., Hot Springs	1897	1907
Vanderbilt Univ., 1897.		
Woody, S. B., Spring Creek	1898	1898
Vanderbilt Univ., 1892.		
Frisbee, J. T., Spring Creek	——	——
English, I. L., Foust	——	——
McDevitt, A. J., Walnut	——	——
Weaver, W. J., Marshall	1897	1903
Jeff. Med. Coll., 1898.		
Bund, J. H., Marshall	1911	1912

MECKLENBURG COUNTY SOCIETY.

President, T. F. Costner, Charlotte	——	—
Jefferson, 1882.		
Secretary, H. A. Wakefield, Charlotte	1908	1910
N. C. Med. Coll., 1908.		
Abernathy, J. S., Charlotte, R. F. D. No. 6	——	——
Alexander, Annie L., Charlotte	1885	1885
Woman's Med. Coll., Pa., 1884.		
Alexander, J. R., Charlotte	1894	1898
Univ. Md., 1894.		
Allan, William, Charlotte	1906	1906
P. & S., Balto., 1906.		
Austin, J. A., Charlotte	1887	1887
Jeff. Med. Coll., 1887.		
Austin, F. D., Charlotte	1907	1907
N. C. Med. Coll., 1907.		
Brenizer, A. G., Charlotte	1911	1911
Johns Hopkins and Univ. Heidelberg, 1907.		
Barron, A. A., Charlotte	——	——
Clifford, J. S., Charlotte	1907	1908
G. W. Univ., Wash., 1906.		
Crowell, A. J., Charlotte	1892	1894
Univ. Md., 1892.		

Members and Address.	*Licensed.*	*Joined State Society.*
Couthen, R. S., Charlotte Balto. Med. Coll., 1902.	1911	1911
Craven, W. W., Huntersville Univ. Md., 1903.	1904	1912
Davidson, J. E. S., Charlotte Univ. Md., 1894.	1897	1898
DeArmon, J. M., Charlotte Univ. Md., 1886.	1886	1887
Faison, I. W., Charlotte Bellevue, 1878.	1878	1878
Gibbon, R. L., Charlotte Jeff. Med. Coll., 1892.	1891	1893
Graham, W. A., Charlotte P. & S., N. Y., 1888	1889	1890
Hawley, F. O., Charlotte Univ. Edinburg, Scot., 1868.	——	1904
Hovis, L. W., Charlotte, R. F. D. N. C. Med. Coll., 1904.	1904	1906
Henderson, S. M., Charlotte, R. F. D. Univ. Md., 1894.	1894	1904
Hunter, L. W., Charlotte, R. F. D. Univ. Md., 1894.	1894	1904
Irwin, John R., Charlotte Univ. Md., 1879.	1879	1879
King, P. M., Charlotte Bellevue and Univ. N. Y., 1902.	1902	1904
Lafferty, R. H., Charlotte N. C. Med. Coll., 1906.	1906	1906
Leinback, R. F., Charlotte Univ. Pa., 1907.	1907	1908
MacConnell, John W., Davidson Univ. Md., 1907.	1908	1908
McLaughlin, C. S., Charlotte Univ. N. C., 1896.	1903	1903
Matheson, J. P. Charlotte N. C. Med. Coll., 1902, and Univ. Md., 1905.	1902	1902
Misenheimer, C. A., Charlotte Univ. N. Y., 1882.	1882	1882
Munroe, J. P., Charlotte Univ. Va., 1885.	1886	1890
Myers, J. Q., Charlotte N. C. Med Coll., 1904.	1904	1904
Moore, O., Charlotte N. C. Med. Coll., 1911.	1911	1911
McManaway, C. G., Charlotte	——	——
Nalle, B. C., Charlotte Univ. Va., 1903.	1905	1905
Nisbet, W. O., Charlotte Univ. Va., 1885.	1886	1899
Pharr, W. W., Charlotte P. & S., Balto., 1881.	1885	1885

Members and Address.	*Licensed.*	*Joined State Society.*
Petree, R. W., Charlotte Univ. Md., 1903.	1903	1903
Peeler, C. N., Charlotte N. C. Med. Coll., 1906.	1907	1907
Query, R. Z., Charlotte, R. F. D.	——	——
Register, E. C., Charlotte Univ. N. Y., 1885.	1887	1887
Reid, W. K., Charlotte Univ. of N. Y., 1891.	1896	1896
Ross, J. K., Charlotte	——	——
Ross, Otho B., Charlotte Univ. Pa., 1909.	1909	1911
Ranson, J. L., Charlotte, R. F. D.	——	——
Ramsey, J. Thomas, Newells Univ. Coll. Med., Rich., 1910.	1911	1912
Skinner, L. C., Davidson N. C. Med. Coll., 1902.	1902	1905
Simmonds, J. O., North Charlotte Grant Univ., 1894.	1906	1906
Strong, C. M., Charlotte Univ. Md., 1898.	1898	1898
Summers, J. W. Charlotte N. C. Med. Coll., 1905.	1905	1910
Squires, J. W., Charlotte N. C. Med. Coll., 1911.	1911	1911
Tucker, J. H., Charlotte Univ. Va., 1899.	1900	1900
Trippe, C. M., Charlotte N. C. Med. Coll., 1911.	1911	1911
Walker, C. E., Charlotte Univ. Md., 1891.	1891	1894
Wakefield, W. H., Charlotte Hosp. Coll. Med., 1890.	1891	1893
Wakefield, H. A., Charlotte N. C. Med. Coll., 1908.	1908	1910
Witherbee, W. D., Charlotte McGill Univ., 1899.	1905	1905
Whisnant, A. M., Charlotte P. & S., Balto., 1893.	1893	1894
Woodley, W. T., Charlotte	——	——
Wooten, W. H., Davidson N. C. Med. Coll., 1894.	1894	1898
Wright, T. H., Charlotte Univ. Va., 1901.	1904	1904
Witherspoon, B. J., Charlotte S. C. Med. Coll., 1894.	1900	1911
Faison, Yates, Charlotte	——	1912
Engle, W. R., Charlotte	——	1912
Winchester, F. M., Charlotte	——	1912
Rowe, H. B., Charlotte Univ. Md., 1910.	1910	1912

Members and Address.	*Licensed.*	*Joined State Society.*
MITCHELL COUNTY SOCIETY.		
President, C. A., Patterson, Spruce Pine N. C. Med. Coll., 1907.	1907	1908
Secretary, R. E. Stock, Bakersville N. C. Med. Coll., 1911.	1911	1911
Buchanan, C. L., Bakersville Tenn. Med. Coll., 1910.	1910	1911
Sloop, E. H., Crossmore	——	——
Tate, W. C., Banner Elk	——	——
MONTGOMERY COUNTY SOCIETY.		
President, A. F. Thompson, Troy Ind., 1895.	1895	1902
Secretary, C. Daligny, Troy Mil. Med. Sch., Paris, 1878.	——	1902
Bowman, H. E., Biscoe N. C. Med. Coll., 1904.	1904	1904
Dowd, J. A., Biscoe N. C. Med. Coll., 1902.	1907	1909
Shamberger, J. B., Star Univ. Md., 1890.	1890	1892
Ingram, C. B., Mt. Gilead Jeff. Med., 1886.	1886	1902
Rankin, P. R., Mt. Gilead	——	1912
MOORE COUNTY SOCIETY.		
President, W. C. Mudgett, Southern Pines	——	——
Secretary, J. Wm. Willcox, Carthage Univ. N. C., 1906.	1906	1906
Blair, A. McNeill, Southern Pines Univ. N. Y., 1897.	1905	1905
McLeod, A. H., Aberdeen Balto. Med. Coll., 1896.	1896	1904
McLeod, Gilbert, Carthage Univ. Md., 1882.	1885	1904
McMillan, J. M., Hemp Atlanta Coll., 1909.	1909	1911
Mudgett, W. C., Southern Pines Md. Med. Coll., 1903.	1908	1908
Shields, H. B., Carthage Atlanta Med. Coll., 1882.	1887	1904
Strut, M. E., Glendon P. & S., Balto., 1893.	1893	1902
Willcox, J. W., Carthage Univ. N. C., 1906.	1906	1906
McDonald, A. A., Jackson Springs N. C. Med. Coll., 1905.	1905	1912
Achorn, J. W., Boston, Mass (Trinity Court).	——	——

Members and Address.	*Licensed.*	*Joined State Society.*
Matthews, J. H., Vass	1907	1908
Univ. N. C., 1907.		
Matthews, M. L., Cameron	1903	1904
Univ. N. C., 1903.		

McDOWELL COUNTY SOCIETY.

President, Guy S. Kerby, Marion	1897	1903
Univ. Coll. Med., Va., 1897.		
Secretary, T. Morris Chaney, Old Fort	1907	1907
Md. Univ., 1906.		
Ashworth, B. L., Marion	1893	1895
P. & S., Balto., 1892.		
Jonas, J. F., Marion	1903	1903
Balto. Med. Coll., 1903.		
McIntosh, T. M., Old Fort	1907	1908
Richmond Med. Coll., 1904.		
Justice, Gaston B., Marion	1907	1908
P. & S., Atlanta, 1907.		

NASH COUNTY SOCIETY.

President, Geo. C. Battle, Rocky Mount	—	—

NEW HANOVER COUNTY SOCIETY.

President, J. T. Schonwald, Wilmington	—	—
Secretary, T. S. Burbank, Wilmington	1880	1904
Bellevue Med. Coll., 1886.		
Galloway, W. C., Wilmington	1880	1880
Wash. Univ., Md., 1874.		
Hall, Wright, Wilmington	1900	1900
Univ. Md., 1900.		
Moore, Houston, Wilmington	—	—
Bullock, D. W., Wilmington	1875	1875
Univ. Md., 1873.		
Caldwell, Morris M., Wilmington	—	—
Thomas, Pride, Wilmington	1902	1902
Univ. Md., 1902.		
Cramer, J. B., Wilmington	1905	1906
Univ. N. C., 1905.		
Koonce, S. E., Wilmington	1896	1900
P. & S., Balto., 1896.		
Willingham, B. J., Wilmington	1906	1906
Med. Coll. Va., 1906.		
Akerman, Josh, Wilmington	1905	1906
Johns Hopkins, 1905.		
Russell, Frank, Wilmington	1893	1893
Univ. Md., 1893.		
Bullock, E. S., Wilmington	—	—
Harris, A. H., Wilmington	1892	1904
Med. Chi. Phila., 1903.		

Members and Address.	*Licensed.*	*Joined State Society.*
Wessell, John C., Wilmington Univ. Md., 1900.	1900	1900
Murphy, J. G., Wilmington Univ. Louisville, 1903.	1903	1905
Bolles, C. P., Wilmington	——	——
Thomas, G. G., Wilmington Univ. Md., 1871.	1871	1871
Harper, Chas., Wilmington Univ. Md., 1894.	1893	1904

ONSLOW COUNTY SOCIETY.

President, C. W. Sutton, Richlands Tulane Univ., 1905.	1905	1905
Secretary, L. D. Bryan, Snead's Ferry Tulane Univ., 1910.	1910	1910
Cox, E. L., Jacksonville Univ. Md., 1889.	1889	1892
Thompson, Cyrus, Jacksonville Univ. of La., 1898.	——	1904
Nicholson, J. L., Richlands Univ. Med. Coll., N. Y., 1875.	1875	1880
Hyatt, H. O., Kinston Univ. of Pa., 1868.	1870	1870
Hyatt, A. L., Kinston Univ. of Md., 1910.	1910	1910
Page, B. W., Raleigh Tulane, 1909.	1909	1910
Montfort, W. J., Swansboro Jefferson, 1857.	——	1904
Hughes, G. R., Pollocksville Univ. N. Y., 1888.	1888	1894

PASQUOTANK-CAMDEN-DARE COUNTY SOCIETY.

President, H. T. Aydlett, Elizabeth City Univ. Va., 1894.	1805	1896
Secretary, O. McMallan, Elizabeth City Univ. of Va., 1880.	1889	1889
Fearing, Zenos, Elizabeth City P. & S., Balto., 1896.	1896	1904
Fearing, Isaiah, Elizabeth City Univ. Md., 1881.	——	1904
Sawyer, C. W., Elizabeth City Univ. Md., 1886.	——	1904
Walker, H. D., Elizabeth City Univ. Md., 1902.	1902	1902
Williams, C. B., Elizabeth City Univ. Coll. Med., Va., 1903.	1903	1906
Sawyer, W. W., Shiloh Univ. Md., 1903.	1903	1905
Hoggard, W. A., Woodville	——	——

Members and Address.	*Licensed.*	*Joined State Society.*
Lumsden, W. J., Elizabeth City Univ. Md., 1869.	——	1888
Williams, C. B., Elizabeth City Univ. Med., 1903.	1903	1906
Cohn, B. W., South Mills Med. Coll. Va., 1884.	1905	1908

PERSON COUNTY SOCIETY.

President, R. S. Baynes, Gordonton P. & S., Balto., 1881.	1881	1904
Secretary, A. F. Nichols, Roxboro Univ. N. C., 1908.	1908	1909
Nichols, C. G., Roxboro Non-Grad. Bellevue.	1885	1891
Schaub, O. P., Roxboro Balto. Med. Coll., 1898.	1898	1898
Bradsher, W. A., Roxboro Univ. Md., 1904.	1904	1905
Love, B. E., Roxboro Univ. Md., 1904.	1904	1905
Long, W. J., Roxboro Balto. Med., 1905.	1905	1907
Merritt, J. H., Woodsdale, R. 2 Univ. N. C., 1906.	1907	1908
Gentry, G. W., Helena Univ. N. C.	——	——
Swann, J. F., Semora P. & S., Balto., 1898.	1898	1904
Warner, Robert F., Prospect Hill	——	——

PAMLICO COUNTY SOCIETY.

President, G. S. Attimore, Stonewall Washington and Lee.	——	1904
Secretary, O. C. Daniels, Arental Med. Coll. of Va., 1903.	1903	1904
Dees, D. A., Stonewall Balto. Med., 1903.	1903	1904
McCotter, L. E., Baybon	——	——

PENDER COUNTY SOCIETY.

President, R. H. Bradford, Burgon N. C. Med. Coll., 1895.	1895	1896
Secretary, J. T. Hoggard, Atkinson Univ. Coll., 1907.	1907	1907

RANDOLPH COUNTY SOCIETY.

President, T. I. Fox, Franklinsville Vanderbilt, 1894.	1898	1898
Secretary, H. B. Hiatt, Asheboro Univ. Md., 1907.	1907	1907

Members and Address.	*Licensed.*	*Joined State Society.*
Myers, R. W., Fullers, R. F. D.	—	—
Grant Univ., Chat., 1897.		
Hubbard, C. C., Farmers	1890	1904
Jeff. Med. Coll., 1888.		
Moore, W. J., Asheboro	1893	1901
P. & S., Balto., 1893.		
Redding, A. H., Cedar Falls	—	—
Hunter, J. V., Asheboro	—	—
Univ. of Louisville.		
Asbury, F. E., Asbury	1885	1896
S. C. Med. Coll., 1876.		

RICHMOND COUNTY SOCIETY.

President, A. C. Everett, Rockingham	1897	1903
Univ. Md., 1897.		
Secretary, H. F. Wilson, Cordova	1902	1904
Univ. Ga., 1891.		
Garrett, F. J., Rockingham	1889	1904
Univ. Md., 1889.		
Coppedge, N. P., Ellerbee	1903	1903
N. C. Med Coll., 1903.		
Howell, W. L., Covington	1910	1910
N. C. Med. Coll., 1910.		
Maness, J. M., Roberdell	1909	1909
Univ. N. C., 1909.		
Hunter, N. C., Rockingham	1899	1904
Med. Chir., Phila., 1897.		
Ledbetter, J. M., Rockingham	1894	1903
Vanderbilt Univ., 1894.		
McPhail, L. D., Rockingham	1900	1902
Univ. Md., 1900.		
Webb, W. P., Rockingham	1897	1904
Med. Coll. S. C., 1897.		

ROBESON COUNTY SOCIETY.

President, A. B. Croom, Maxton	1905	1906
Univ. Md., 1905.		
Secretary, D. W. Harris, Maxton	1908	1911
Univ. N. C., 1908.		
Croom, J. D., Maxton	1876	1887
Med. Coll. of S. C.		
Knox, Jno., Jr., Lumberton	1906	1907
Univ. Md.		
McMillan, B. F., Red Springs	1882	1884
Univ. Md.		
Brown, J. P., Fairmont	—	1904
Univ. Md., 1883.		
Currie, D. S., Parkton	1906	1906
N. C. Med. Coll., 1906.		
Evans, W. E., Rowland	1894	1904
Med. Coll. Va., 1894.		

Members and Address.	*Licensed.*	*Joined State Society.*
Gibson, M. R., Maxton Univ. Md., 1905.	1905	1908
Hodgin, H. H., Red Springs N. C. Med. Coll., 1906.	1906	1906
Kirkpatrick, L. R., Maxton N. C. Med. Coll., 1902.	1902	1902
McMillan, J. L., Red Springs Univ. Md., 1881.	1881	1902
Pate, G. M., Rowland Med. Coll. S. C., 1900.	1900	1905
Reedy, Howard, Rowland Med. Coll. S. C., 1884.	——	1904
Pope, H. T., Lumberton N. C. Med. Coll., 1894.	1893	1902
Stamps, Thomas, Lumber Bridge Univ. Louisville, 1888.	1888	1888
Smith, J. McN., Rowland Jeff. Med. Coll., 1908.	1908	1908
Schubert, Louis H., Gibson Louisv. Med. Coll., 1908.	1908	1909
Surles, J. B., Lumber Bridge Jeff. Med. Coll., 1909.	1909	1911
McMillan, Roscoe, Red Springs	——	——
Johnson, T., Lumberton	——	——
Pate, J. F., Pembroke	——	——
Andrews, N. H., Pembroke	——	——

ROWAN COUNTY SOCIETY.

President, C. M. VanPoole, Salisbury, R. F. D. P. & S., Balto., 1880.	1880	1880
Secretary, E. W. Currie, Salisbury N. C. Med. Coll., 1907.	1907	1907
Brown, George A., Mt. Ulla Univ. Coll. Med., Va., 1897.	1897	——
Busby, J. G., Spencer Univ. Md., 1904.	1904	1904
Caldwell, J. A., Salisbury Johns Hopkins, 1904.	1905	1905
Choate, G. W., Rockwell N. C. Med. Coll., 1909.	1909	1909
Council, J. B., Salisbury P. & S., Balto., 1884.	1885	1885
Crump, W. L., Salisbury Jeff. Med., 1879.	1881	1904
Edwards, B. O., Landis N. C. Med. Coll., 1905.	1905	1905
Heilig, H. G., Salisbury Univ. Md., 1899.	1899	1904
McKenzie, W. W., Salisbury Jeff. Med., 1893.	1893	1894
Monk, H. L., Spencer Med. Coll. of Va., 1897.	1899	1903

Members and Address.	*Licensed.*	*Joined State Society.*
Monk, G. M., Spencer Univ. N. C., 1908.	1908	1908
Ramsauer, G. A., China Grove Jeff. Med., 1880.	1886	1898
Sigman, F. G., Spencer Univ. Coll. Med., Va., 1909.	1909	1909
Spencer, F. B., Salisbury Univ. N. C., 1909.	1909	1910
Stokes, J. E., Salisbury Univ. Md., 1892.	1900	1901
Summerell, E. M., Mill Bridge Univ. Pa., 1883.	1883	1883
Trantham, H. T., Salisbury Univ. N. Y., 1875.	1878	1879
West, R. M., Salisbury Med. Coll. of Va., 1900.	1900	1904
Whitehead, John, Salisbury Univ. Penn., 1880.	1880	1880
Woodson, C. W., Salisbury P. & S., N. Y., 1904.	1905	1907
Withers, Banks, China Grove, R. F. D. Univ. Md., 1896.	1896	——
Smoot, M. L., Salisbury Univ. Coll. Med., Va., 1901.	1901	1904
Brawley, R. V., Salisbury Univ. Coll. Med., Va., 1903.	1903	1904

ROCKINGHAM COUNTY SOCIETY.

President, S. B. Ellington, Wentworth Jeff. Med., 1877.	——	1906
Secretary, John B. Roy, Leakesville Balto. Med. Coll.	1898	1898
McBride, M. H., Reidsville	——	——
Taylor, T. G., Leaksville Ky. Sch. of Med., 1877.	——	——
Sweeney, John, Spray P. & S., Balto., 1886.	——	1906
Tuttle, A. F., Spray N. C. Med. Coll., 1901.	1901	1908
Bitting, B. T., Spray Balto. Med. Coll., 1895.	1895	1909
Mortue, S. L., Leaksville Balto. Med. Coll., 1892.	1892	1904
Taylor, J. T., Madison Univ. of Md., 1906.	1906	1906
Matherson, R. C., Madison P. & S., Balto.	——	1905
Wilson, W. P., Madison	——	——
Whorton, C. R., Ruffin Med. Coll. Va., 1897.	——	——
Abernathy, M. B., Reidsville	1906	1910

Members and Address.	*Licensed.*	*Joined State Society.*
N. C. Med. Coll., 1906.		
McGehee, J. W., Reidsville	1904	1904
Univ. of Md., 1904.		
Webb, S. E., Draper	1908	1911
Univ. N. C., 1908.		
Johnson, W. A., Reidsville, R. F. D. 2	1909	1911
Univ. N. C., 1908.		

RUTHERFORD COUNTY SOCIETY.

President, W. A. Thompson, Rutherfordton	——	1904
P. & S., Balto., 1885.		
Secretary, W. C. Bostic, Forest City	1905	1905
N. C. Med. Coll., 1905.		
Biggs, M. H., Rutherfordton	1907	1908
Univ. Penn., 1897.		
Harrell, L. B., Caroleen	1902	1903
Grant Univ., 1897.		
Hicks, Romeo, Henrietta	——	1899
So. Med. Coll., 1888.		
Hobgood, J. E., Caroleen	1908	1909
Jeff. Med. Coll., 1907.		
Lancaster, B. B., Fingerville, S. C., R. F. D.	——	1909
So. Med. Coll., 1889.		
Lovelace, T. B., Henrietta	1885	1904
P. & S., Balto, 1883.		
Smart, J. B., Forest City	1907	1911
Grant Univ., 1900.		
Allhands, J. M., Cliffside	1910	1911
Coll. of Med. and Surg., 1910.		
Norris, Henry, Rutherfordton	1907	1908
Univ. Penn., 1896.		
Harris, E. B., Rutherfordton	——	1904
P. & S., Balto., 1884.		
Rucker, A. A., Rutherfordton	1908	1909
Univ. Md., 1908.		
Thompson, J. B., Bostic, R. F. D.	1898	1904
P. & S., Balto., 1899.		
Twitty, J. C., Rutherfordton	1892	1906
Balto. Med. Coll., 1892.		
Wiseman, C. B., Henrietta	1902	1904
P. & S., Balto., 1902.		
Gold, Chas. F., Ellenboro	1910	1911
Univ. N. C., 1910.		
Reid, G. P., Forest City	1894	1899
Univ. Sch. Med., 1894.		

SAMPSON COUNTY SOCIETY.

President, J. O. Matthews, Clinton, R. F. D.	1897	1902
Univ. Coll. Med., Va., 1897.		
Secretary, F. H. Holmes, Clinton	1895	1896
Univ. Md., 1895.		

Members and Address.	*Licensed.*	*Joined State Society.*
Wilson, R. B., Newton Grove Ky. Sch. Med., 1889.	1890	1904
Stevens, J. A., Clinton Jeff Med. Coll., 1883.	1883	1883
Sikes, G. L., Salemburg Univ. Coll. Med., Va., 1900.	1900	1904
Kerr, J. D., Jr., Clinton Univ. Md., 1869.	——	1904
McLean, R. H., Dunn, R. F. D. 6 P. & S., Balto., 1882.	——	1907
Sloan, Henry, Ingold S. C. Med. Coll., 1881.	1885	1902
Underwood, O. E., Earnest	——	——
Crumpler, Paul, Roseboro Univ. Tenn., 1907.	1907	1908
Taylor, W. I., Kerr	——	——
Cooper, G. M., Clinton	——	——

SCOTLAND COUNTY SOCIETY.

President, W. G. Shaw, Wagram P. & S., Balto., 1892.	1895	1904
Secretary, Peter McLean, Laurinburg Univ. of Md., 1906.	1907	1907
Pate, W. T., Gibson P. & S., Balto., 1885.	1885	1885
Gibson, J. S., Gibson Univ. of Md., 1907.	1907	1907
John, Peter, Laurinburg Univ. of Md., 1897.	1897	1904
Everington, G. D., Laurinburg N. C. Med. Coll., 1899.	1898	1898
James, W. D., Laurinburg Jeff. Med. Coll., 1908.	1908	1908
McLean, Allan, Wagram Univ. of Md., 1908.	1908	1908
Prince, D. M., Laurinburg S. C. Med. Coll., 1875.	1875	1885

STOKES COUNTY SOCIETY.

President, J. H. Ellington, Sandy Ridge	——	——
Secretary, W. V. McCanless, Danbury	——	——
Jones, A. G., Walnut Cove Univ. N. Y., 1868.	1894	1904
McCanless, W. L., Danbury	——	——
Moore, W. B., Smith P. & S., Balto., 1893.	1893	1904
Leak, J. J. Univ. Coll. Med., Va.	1901	1904
Hill, L. H., Germanton Jeff. Med. Coll., 1877.	1877	1877

Members and Address.	*Licensed.*	*Joined State Society.*
Moin, S. A., Francisco P. & S., Balto., 1888.	——	1904
Phillips, M. D., Dalton Univ. N. Y., 1881.	1881	1904
Stale, W. C., Danbury	——	——
Stale, J. W., Capella	——	——

STANLY COUNTY SOCIETY.

President, D. P. Whitley, Albemarle, R. F. D. No. 4 Univ. Md., 1890.	1890	1890
Secretary, J. Clegg Hall, Albemarle Univ. Coll., Richmond, 1890.	1899	1899
Cox, B. F., Palmerville P. & S., Balto.	1886	1888
Dunlap, L. V., Albemarle Univ. N. C., 1909.	1909	——
Allen, J. A., New London Univ. Coll. Med.	1901	1906
Anderson, J. N., Albemarle Univ. Md., 1895.	1895	1904
Hill, W. I., Albemarle Univ. Md., 1897.	1897	1904
Hartsell, F. E., Big Lick Balto. Med. Coll., 1895.	1895	1905
Hathcock, T. A., Norwood Univ. Md., 1893.	1893	1904
Campbell, J. I., Norwood Under-graduate N. C. Med. Coll.	1898	1904
Laton, J. F., Albemarle N. C. Med. Coll.	1904	1908

SURRY COUNTY SOCIETY.

President, R. E. L. Flippin, Pilot Mountain Balto. Med. Coll.	1897	1901
Secretary, E. M. Hollingsworth, Mt. Airy P. & S., Balto.	1886	1904
Ashby, T. B., Mt. Airy P. & S., Balto.	1885	1896
Abeher, D. C., Mt. Airy Univ. Md.	1909	1910
Allred, E. W., Mt. Airy Jeff. Med., Phila.	1877	1904
Baird, C. A., Mt. Airy	——	——
Flippin, J. M., Mt. Airy P. & S., Balto.	1884	——
Hollingsworth, R. E., Mt. Airy Univ. Coll. Med., Va.,	1898	1904
Taylor, Wm. S., Mt. Airy Jeff. Med. Coll., Phila.	1874	1894
Flippin, S. T., Siloam N. C. Med. Coll.	——	——

Members and Address.	*Licensed.*	*Joined State Society.*
Smith, J. B., Pilot Mountain P. & S., Balto.	1885	1896
Stone, Wm. M., Dobson N. C. Med. Coll.	1906	1907
Ring, J. W., Elkin	——	——
Reece, J. M., Elkin	——	——

UNION COUNTY SOCIETY.

President, D. R. Perkins, Marshville Balto. Med. Coll., 1903.	1906	1906
Secretary, H. D. Stewart, Monroe Univ. of Md., 1898.	1898	1898
Armfield, R., Marshville Med. Coll. of Va., 1881.	——	1904
Ashcraft, J. E., Monroe Univ. of N. Y., 1887.	1887	1888
Blair, J. M., Monroe Louisv. Med. Coll., 1887.	——	1898
Blair, M. P., Marshville Med. Coll. of Va., 1895.	1894	1904
Eubanks, J. B., Monroe, R. F. D. 1 Vanderbilt Univ., 1887.	——	1904
Fitzgerald, J. Y., Indian Trail Jefferson, 1889.	1889	1891
McCain, W. R., Waxhaw Univ. Md., 1897.	1898	1906
Nance, G. B., Monroe Jeff. Med. Coll., 1885.	1885	1904
Neal, J. W., Monroe Univ. N. Y., 1884.	1887	1904
Stevens, S. A., Monroe Univ. Md., 1900.	1898	1904
Payne, R. L., Monroe Tulane Univ., 1912.	1912	1912
Whitley, A. D. N., Unionville Non-graduate Univ. Md.	1897	1904

VANCE COUNTY SOCIETY.

Secretary, F. E. Perkins, Henderson Univ. of Buffalo, N. Y., 1905.	1906	1911
Harris, F. R., Henderson Univ. of Va., 1881.	1882	1890
Gill, R. J., Henderson Univ. Penn., 1880.	1880	1890
Bass, H. H., Henderson Univ. Coll. Med., Va.	1900	1902
Allen, B. G., Henderson Bellevue Med. Coll., N. Y.	1904	1904
Fenner, E. F., Henderson Univ. Md., 1905.	1905	1905

Members and Address.	*Licensed.*	*Joined State Society.*
McAllister, Wm., Middleburg P. & S., Balto., 1890.	1890	1890
Morton, N. D., Manson Univ. Coll. Med., Va., 1909.	1909	1911
Chapin, W. B., Townsville Univ. N. C., 1909.	1909	1909
Adams, D. C., Kittrell	——	——

TRANSYLVANIA COUNTY SOCIETY.

President, A. E. Lyday, Brevard, R. F. D. Med. Coll., Tenn.	1891	1903
Secretary, E. S. English, Brevard Univ. of South.	1901	1903
Wallis, W. J., Brevard P. & S., Balto.	1892	1903
Hunt, C. W., Brevard P. & S., Balto.	1880	1903
King, M. M., Brevard Eclectic Coll., Ga.	1880	1903

WAKE COUNTY SOCIETY.

President, Albert Anderson, Raleigh Univ. Va., 1888.	1888	1889
Secretary, W. C. Horton, Raleigh Bellevue, 1882.	——	——
McCullers, J. J. L., McCullers P. & S., Balto., 1886.	1886	1904
Young, L. B., Rolesville P. & S., Balto., 1886.	1886	1907
Battle, K. P., Jr., Raleigh Univ. Va., 1881, Bellevue 1882.	1882	1882
Templeton, J. M., Cary Balto. Med. Coll., 1882.	1882	1904
McGeachy, R. S., Raleigh Bellevue Med. Coll., 1894.	1894	1895
Caviness, Z. M., Raleigh Univ. N. C., 1903.	1903	1903
Jordan, T. M., Raleigh P. & S., Balto., 1881.	1881	1881
McGhee, J. W., Raleigh Univ. Penn., 1860.	1860	1865
Penny, J. A. J., Vanteen Univ. N. Y., 1861.	——	1904
Lewis, R. H., Raleigh Univ. Md., 1871.	1877	1877
Thompson, S. W., Falls Med. Coll. Va., 1875.	——	1904
Buffalo, J. S., Garner Balto. Med. Coll, 1900.	1900	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Knox, A. W., Raleigh Bellevue Med. Coll., 1874.	1878	1880
Tucker, H. McK., Raleigh Univ. Md., 1899.	1899	1899
Royster, H. A., Raleigh Univ. Penn., 1894.	1894	1895
Ferrebee, E. B., Raleigh P. & S., Balto., 1885.	1885	1903
Jenkins, C. L., Raleigh Univ. N. Y., 1890.	1890	1892
Powers, J. B., Wake Forest Long Island Med. Coll., 1878.	1885	1904
Rogers, J. R., Raleigh P. & S., Balto., 1886.	1886	1904
Royster, W. I., Raleigh	——	——
Carroll, E. Dixon, Raleigh Woman's Med. Coll., N. Y., 1895.	1900	1900
Goodwin, A. W., Raleigh Bellevue Med. Coll., 1887.	1887	1887
Bell, G. M., Wakefield P. & S., Balto., 1885.	——	1903
Sorrell, L. P., Flint Med. Coll. Va., 1875.	——	1904
Ray, O. L., Raleigh, R. F. D. No. 6 Univ. Coll. Med., Va., 1899.	1899	1904
Judd, J. M., Cardenas Balto. Med. Coll., 1897.	1898	1901
Riggsbee, A. E. Cary	——	——
Rankin, W. S., Raleigh Univ. Md., 1901.	1901	1901
Fowler, M. L., Riley P. & S., Balto., 1881.	——	1904
Burt, B. W., Eno P. & S., Balto., 1886.	1886	1904
Holding, S. P., Wake Forest Bellevue Med. Coll., 1897.	1897	1904
Haywood, Herbert, Raleigh Bellevue Med. Coll., 1868.	——	1898
Johnson, R. W., Apex Univ. Tenn., 1900.	1901	1904
Hayden, Catherine, Raleigh Univ. Colo., 1894.	1902	1904
Sexton, J. A., Fuquay Springs Univ. Md., 1873.	1879	1904
Stevens, R. S., Raleigh Univ. N. C., 1905.	1905	1906
Abernethy, C. O., Raleigh Univ. N. C., 1906.	1906	1906
Whitaker, Joel D., Raleigh Univ. Md., 1900.	1905	1907
Wilkerson, Chas. B., Apex Univ. N. C., 1906.	1906	1907

Members and Address.	*Licensed.*	*Joined State Society.*
Underhill, H. P., Wendell	—	—
McKee, John, Raleigh Univ. Penn., 1860.	1860	1865
Watson, John B., Raleigh	—	—
Shore, C. A., Raleigh	—	—
Haywood, H. B., Jr., Raleigh	—	—
Turner, H. G., Raleigh	—	—
Ferrell, John A., Raleigh	—	—
Strickland, J. A., Zebulon Univ. N. C., 1909.	1909	1910
Moore, J. L., Wendell P. & S., Balto., 1893.	—	—
Riddick, I. G., Raleigh	—	—
Carstophen, W. T., Wake Forest, trans. from Vance	—	—
Hester, J. R., Knightdale Univ. N. C., 1910.	1910	1911
Horton, M. C., Raleigh N. C. Med. Coll., 1903.	1911	1911
Powers, J. B., Jr., Wake Forest Columbia Univ., N. Y., 1907.	1907	1911
Barbee, G. S., Zebulon Univ. N. C., 1910.	1910	1912
Campbell, A. C., Raleigh Univ. N. C., 1910.	1910	1912
Judd, E. C., Raleigh	—	—
Haywood, F. J., Raleigh Bellevue Med. Coll., 1869.	1869	1870
McKee, James, Raleigh	—	—
Ferebee, E. B., Raleigh	—	—
Rowland, D. S., Raleigh	—	—
Perry, Hilliard, Knightdale	—	—

WAYNE COUNTY SOCIETY.

President, L. W. Kornegay, Mt. Olive Davidson, 1905.	—	1909
Secretary, J. Ramey Parker, Goldsboro Univ. Coll. Med., Va., 1901.	1901	1904
Bizzell, T. M., Goldsboro Univ. Md., 1909.	1909	1909
Brathers, J. E., Goldsboro Bellevue Med. Coll., 1874	1874	1910
Exum, H. P., Jr., Goldsboro Med. Coll. Va., 1901.	1902	1904
Faison, W. W., Goldsboro Jeff. Med. Coll., 1878.	1883	1904
Ginn, T. L., Goldsboro Med. Coll. Va., 1901 .	1901	1904
Kennedy, J. B., Goldsboro Univ. Nashville, 1870.	—	1904
Lee, R. E., Goldsboro Univ. Md., 1896.	1896	1900

Members and Address.	*Licensed.*	*Joined State Society.*
Miller, R. B., Goldsboro Med. Coll. Va., 1899.	1899	1904
Morris, G. B., Mt. Olive Balto. Med. Coll., 1909.	1909	1912
Person, E. C., Pikeville Med. Coll. Va., 1904.	1904	1904
Smith, R A., Goldsboro	——	1912
Smith, W. H., Goldsboro Univ. Penn., 1909.	1909	1910
Steele, W. C., Mt. Olive Univ. Md., 1894.	1891	1894

WARREN COUNTY SOCIETY.

President, P. J. Macon, Warrenton Univ. Md., 1883.	1883	1901
Secretary, C. H. Peete, Warrenton Univ. Va., 1903.	1906	1906
Macon, G. H., Warrenton Univ. Coll. Med., 1910.	1911	1911
Holt, T. J., Wise Med. Coll. Va., 1904.	1904	1904
Perry, M. P., Macon	——	1912

WASHINGTON-TYRELL COUNTY SOCIETY.

President, W. H. Hardin, Creswell Wash. Univ., 1870.	——	——
Secretary, W. H. Ward, Plymouth Univ. Md., 1881.	1886	1886
Disoway, A. W., Plymouth Univ. Md., 1905.	1905	1908
Flowers, C. A., Columbia P. & S., Balto., 1907.	1907	1907
Halsey, B. F., Roper Vanderbilt Univ., 1893.	1894	1894
Hassell, Jas. L., Creswell P. & S., Balto., 1886.	1886	1908
Speight, J. W., Roper Ky. Sch. Med., 1885.	1885	1910
Spruill, Jas. L., Columbia Univ. Md., 1895.	1895	1908
Gilmer, B. H., Plymouth Univ. Coll. Med., Va., 1903.	1910	1910
Marriner, N. B., Belhaven Univ. Coll. Med., Va.	——	——

WILSON COUNTY SOCIETY.

President, J. S. Harrison, Elm City Med. Coll. of Va., 1903.	1905	1908
Secretary, Henry B Best, Wilson Univ. N. C., 1907.	1907	1908

Members and Address.	*Licensed.*	*Joined State Society.*
Moore, K. C., Wilson Univ. of Mich., 1909.	1909	1910
Moore, C. E., Wilson Bellevue, N. Y., 1875.	1875	1875
Dickinson, E. T., Wilson Med. Coll. Va., 1895.	1895	1896
Herring, B. S., Wilson Univ. Mich., 1900.	1900	1900
Anderson, W. S., Wilson Washington Univ., Balto., Md., 1868.	——	1887
Anderson, W. H., Wilson Univ. Va., 1902.	1903	1903
Williams, A. F., Wilson Univ. Md., 1901.	1901	1901
Swindell, C. L., Wilson Univ. Md., 1909.	1909	1909
Saliba, M. M., Wilson Balto. Med. Coll., 1897.	1910	1910
Freeman, H. F., Middlesex P. & S., Balto., 1875.	1875	1875
Crocker, S. H., Stantonsburg Ky. Sch. Med., 1894.	1894	1894
Eagles, C. S., Saratoga Univ. N. C., 1909.	1909	1909
Moore, E. G., Elm City Univ. Md., 1883.	1883	1890
Barnes, B. F., Elm City Univ. Md., 1902.	1902	1902
Lamm, I. W., Lucama Univ. Coll. Med., Va., 1899	1899	1899

YADKIN COUNTY SOCIETY.

President, C. M. Holcomb, Boonville P. & S., Balto., 1869.	——	——
Secretary, J. R. Finney, Boonville N. C. Med. Coll., 1910.	1910	1910
Shore, T. W., Boonville Univ. Va., 1898.	1899	1904
Harding, T. R., Yadkinville P. & S., Balto., 1885.	1885	1906
Russell, S. L., Yadkinville Univ. Tenn., 1892.	1889	1904
Royall, M. A., Yadkinville	——	——
Chingman, J. J., Huntsville	——	——

TRANSACTIONS

OF THE

NORTH CAROLINA HEALTH OFFICERS' ASSOCIATION

SECOND ANNUAL MEETING

HENDERSONVILLE, N. C.

JUNE 17, 1912

MINUTES

MEETING OF THE NORTH CAROLINA HEALTH OFFICERS' ASSOCIATION.

HENDERSONVILLE, JUNE 17, 1912.

President McBrayer called the Association to order at 9:45 a. m.

Mr. John E. Ray was requested to open the meeting with prayer, which he did.

Dr. J. S. Brown, County Superintendent of Health, of Henderson County, then delivered the address of welcome, to which the Secretary of the Association, in the absence of Dr. D. C. Absher, responded.

President McBrayer then delivered his Presidential Address, which will be found printed in the Transactions of the North Carolina Medical Society.

Dr. Ben K. Hays moved that the President's address be printed in pamphlet form and furnished the health officers of the State. This motion was carried.

The Minutes of the last annual meeting were then read by the Secretary and approved by the President.

The report of the Secretary-Treasurer was then made. The Treasurer stated that he had $40.00 on hand, the total amount collected to date.

The Publicity Committee, through its Chairman, W. S. Rankin, made a report as to the publicity work in regard to public health work that was being done by the Committee. Attention was called to the amount of newspaper material being supplied to the public by the newspapers of the State from the central office at Raleigh.

In the absence of Dr. W. A. McPhaul, Chairman of the Legislative Committee, there was no report from that Committee.

Dr. T. M. Jordan, of Raleigh, moved that the Publicity Committee use as much of the address of the President as possible in newspaper form and distribute that address so arranged to the newspapers of the State. Dr. Booth, of Oxford, seconded this motion. This motion was carried.

The counties were then called alphabetically and the health officers present from the various counties made a brief report of the health work done in their counties during the past year. These reports will be found in the transactions of the North Carolina Health Officers' Association.

After the reading of an instructive paper by Dr. G. Floyd Ross, County Superintendent of Health, of Guilford County, on "The Opportunities of County Health Work," the meeting adjourned for dinner.

June 17, 2:30 p. m.

The meeting was called to order by the President, Dr. McBrayer.

Dr. J. Howell Way, President of the North Carolina State Board of Health, discussed the need of "The Whole-Time County Health Officer." Dr. C. W. Stiles spoke on the same subject. These papers were discussed by a number of the health officers present, the discussion being led by Dr. A. Bascom Groom, of Maxton, N. C.

Mr. P. B. Beard, Chairman of the Board of County Commissioners of Rowan County, delegate from the Rowan County Board of Health, was present, and took part in this discussion.

The next paper on the program contributed by Dr. John A. Ferrell, was on the subject, "What the Rockefeller Sanitary Commission Can Do to Build up County Health Work." This paper will be found printed in the Transactions of the North

Carolina Medical Society. This paper was discussed by Dr. R. H. Lewis.

The Association was then favored with an instructive and entertaining discussion of "How to Bring Indictments for Violation of Health Laws," by Hon. R. R. Williams, representative from Buncombe County to the General Assembly of 1911.

The next paper on the program was read by Dr. T. M. Jordan, Health Officer of Raleigh, which dealt with "Methods for Securing the Co-operation of the Public in Health Work." The discussion of this paper was opened by Dr. S. D. Booth, County Superintendent of Health of Granville County.

A motion was introduced by Dr. D. E. Sevier, asking that a committee be appointed by the President of the Association to report at the next meeting of the Association on methods for removing and preventing vermin in county institutions. This motion was unanimously carried. The President appointed Dr. L. N. Green, Gastonia, N. C.; Dr. J. J. L. McCullers, McCullers, N. C.; and Dr. George M. Cooper, Clinton, N. C.; on this committee.

JUNE 17, 8:30 p. m.

Hon. J. Y. Joyner addressed the Association on "Education and Public Health." This address was a masterly treatment of the relation of these two fundamental problems.

Prof. A. C. Reynolds, County Superintendent of Schools of Buncombe County, then addressed the Association on "What the County Superintendents of Schools Can Do for Public Health." His address was very much enjoyed.

Mr. John E. Ray, Superintendent of the State Deaf, Dumb and Blind School, at Raleigh, then spoke to the Association on "The Prevention of Ophthalmia Neonatorum."

The next order of business was the election of officers. The following officers were elected:

President, Dr. L. N. Glenn, Gastonia, N. C.; Vice-President, Dr. Geo. M. Cooper, Clinton, N. C.; Secretary and Treasurer, Dr. W. S. Rankin, Raleigh, N. C.

It was left to the President to appoint an Executive, Legislative and Publicity Committee.

Upon motion the meeting adjourned *Sine Die.*

W. S. Rankin, *Secretary.*

ATTENDANCE OF HEALTH OFFICERS.

The following Health Officers were present at the Hendersonville meeting:

County Superintendents of Health

County	Officer's Name	Address
Brunswick	Dr. J. A. Dosher	Southport
Buncombe	Dr. D. E. Sevier	Asheville
Camden	Dr. W. W. Sawyer	Shiloh
Cherokee	Dr. J. N. Hill	Murphy
Columbus	Dr. H. B. Maxwell	Whiteville
Cumberland	Dr. Wm. S. Jordan	Fayetteville
Davidson	Dr D. J. Hill	Lexington
Davie	Dr. J. W. Rodwell	Mockville
Durham	Dr. N. M. Johnson	Durham
Forsyth	Dr. John Bynum	Winston-Salem
Gaston	Dr. L. N. Glenn	Gastonia
Gates	Dr. G. D. Williams	Gatesville
Granville	Dr. S. D. Booth	Oxford
Greene	Dr. W. B. Murphy	Snow Hill
Guilford	Dr. G. Floyd Ross	Greensboro
Haywood	Dr. J. R. McCracken	Waynesville
Iredell	Dr. A. Campbell	Statesville
Johnston	Dr. A. H. Rose	Smithfield
Mecklenburg	Dr. C. S. McLaughlin	Charlotte
Montgomery	Dr. C. Daligny	Troy
Rockingham	Dr. Samuel B. Ellington	Wentworth
Rowan	Mr. P. B. Beard	Salisbury
Sampson	Dr. George M. Cooper	Clinton
Stokes	Dr. J. Walter Neal, R. 3	Walnut Cove
Wake	Dr. J J. L. McCullers	McCullers
Warren	Dr. M. P. Perry	Macon

Municipal Health Officers

Asheville	Dr. L. B. McBrayer
Davidson	Dr. Z. K. Justice
Gastonia	Dr. McG. Anders
Kenly	Dr. J. C. Grady
Mount Airy	Hon. W. G. Sydnor, Mayor
Raleigh	Dr. T. M. Jordan
Wilkesboro	Hon. S. C. Absher, Mayor

State Health Officers

Waynesville	Dr. J. Howell Way
Raleigh	Dr. R. H. Lewis
Raleigh	Dr. John A. Ferrell
Raleigh	Dr. C. A. Shore
Raleigh	Dr. W. S. Rankin

PROGRAM

NORTH CAROLINA STATE HEALTH OFFICERS' ASSOCIATION, HENDERSONVILLE, N. C., JUNE 17, 1912

Second Annual Session

Monday, 9:30 a. m.

1. Meeting called to order by President McBrayer.
2. Enrollment of members.
3. Address of Welcome, Dr. J. S. Brown, County Superintendent of Health of Henderson County, Hendersonville, N. C.
4. Response to Address of Welcome, Dr. D. C. Absher, Health Officer, Mount Airy, N. C.
5. President's Address, Dr. L. B. McBrayer, Health Officer, Asheville, N. C.
6. Reading of Minutes of Last Annual Meeting, Dr. W. S. Rankin, Secretary, North Carolina Health Officers' Association, Raleigh, N. C.
7. Report of Secretary-Treasurer, Dr. W. S. Rankin, Secretary, North Carolina Health Officers' Association, Raleigh, N. C.
8. Report of Committees:
   (*a*) Publicity Committee, Dr. W. S. Rankin, Chairman, Raleigh, N. C.
   (*b*) Legislative Committee, Dr. W. A. McPhaul, Chairman, Lumberton, N. C.
9. Reports of County Health Officers of health work done in their respective counties during the year, and of the work contemplated for the ensuing year. The counties will be called alphabetically.
10. The Opportunity of County Health Work: Dr. G. Floyd Ross, County Superintendent of Health of Guilford County, Greensboro, N. C.
11. Discussion: Opened by Dr. B. W. Page, County Superintendent of Health, Robeson County, Lumberton, N. C.; continued by Dr. W. A. McPhaul, former Superintendent of Health of Robeson County, and Member of General Assembly 1911, Lumberton, N. C.; Dr. J. E. Malone, County Superintendent of Health of Franklin County, Louisburg, N. C.; Dr. J. R. McCracken, County Superintendent of Health of Haywood County, Waynesville, N. C., and Dr. A. H. Rose, County Superintendent of Health of Johnston County, Smithfield, N. C.

Adjournment for Dinner.

MONDAY, 2:30 p. m.

12. The Whole-Time County Health Officer: Dr. J. Howell Way, President, North Carolina State Board of Health, Waynesville, N. C.

13. Discussion: Opened by Dr. A. Bascom Croom, Maxton, N. C.: continued by Dr. L. N. Glenn, Vice-President of the North Carolina Health Officers' Association, and County Superintendent of Health of Gaston County, Gastonia, N. C.; Dr. Albert D. Parrott, County Superintendent of Health of Lenoir County, Kinston, N. C.; Dr. C. Daligny, County Superintendent of Health of Montgomery County, Troy, N. C., and Dr. D. J. Hill, County Superintendent of Health of Davidson County, Lexington, N. C.

14. What the Rockefeller Sanitary Commission Can Do to Build Up County Health Work: Dr. John A. Ferrel, Assistant Secretary of the State Board of Health for the Eradication of Hookworm Disease, Raleigh, N. C.

15. Discussion: Opened by Dr. R. H. Lewis, member State Board of Health, Raleigh, N. C.; continued by Colonel J. L. Ludlow, member State Board of Health, Winston-Salem, N. C.; Dr. W. A. Bradshier, County Superintendent of Health of Person County, Roxboro, N. C., and Dr. J. P. Monroe, County Superintendent of Health of Lee County, Sanford, N. C.

16. The Advantage of Combining Town and County Health Work: Dr. John Bynum, Winston-Salem, N. C.

17. Discussion: Opened by Dr. Charles O'H. Laughinghouse, member of the State Board of Health, Greenville, N. C.; continued by Dr. William S. Jordan, County Superintendent of Health of Cumberland County, Fayetteville, N. C.

18. How to Bring Indictments for Violation of Health Laws: Hon. R. R. Williams, Representative of Buncombe County, General Assembly of 1911, Asheville, N. C.

19. Methods for Securing the Co-operation of the Public in Health Work: Dr. T. M. Jordan, Health Officer, Raleigh, N. C.

20. Discussion: Opened by Dr. Charles T. Nesbitt, Health Officer, Wilmington, N. C.; continued by Dr. S. D. Booth, County Superintendent of Health of Granville County, Oxford, N. C.

MONDAY, 8:00 p. m.

21. Education and Public Health: Hon. J. Y. Joyner, State Superintendent of Public Instruction, Raleigh, N. C.

22. What the County Superintendent of Schools Can Do for Public Health; Prof. A. C. Reynolds, County Superintendent of Schools of Buncombe County, Asheville, N. C.

23. Discussion of the two preceding addresses: Opened by Rev. George W. Lay, Rector of St. Mary's School, Raleigh, N. C.; continued by Mr. R. J. Tighe, Superintendent of Graded Schools, Asheville, N. C.
24. The Relation of the Church to Public Health: William Louis Poteat, LL.D., President of Wake Forest College, Wake Forest, N. C.
25. Election of Officers.

Adjourned Sine Die.

ADDRESS OF WELCOME

J. S. Brown, M.D., Hendersonville.

Ladies and Gentlemen, Fellow Health Officers:

Away back in the eighteenth century the vanguard of political freedom gathered together in the hamlet of Charlotte, and did something. More than a year later, on a memorable fourth of July, in Penn's great city of brotherly love, this call to the sons of liberty was ratified. Just a year ago in this same Charlotte, North Carolina's vanguard of Health Preservation—of Prevention of Disease—held its first organized meeting. Today we meet to ratify this auspicious and prophetic beginning and to press forward toward the accomplishment of great things for humankind. Prevention is the keynote of progress in health, and every chord in our harp must respond and sound in harmony with the call of prevention. It is most fitting that this most important meeting should be held in a coming city whose greatest mission is prevention. Here thousands find refuge from influences that depress and debilitate. The malarial parasite cannot enter here. The tubercle bacillus feels ill at ease. The vigor and vitality here instilled into the human system enables it to withstand more successfully the attacks of the enemies of mankind. Inhale our bracing air; imbibe our pure water; live and breathe and enjoy life, and feel for yourselves this wonderful preventing power.

This city has never been confined by gates. You can hardly tell where city ends and country begins. It is all wide open to you. The everlasting hills, those sublime heights overwhelming in grandeur, the beautiful valleys and limpid streams, the lakes, the fruitful fields and fragrant flowers, and pines and oaks and evergreens, all bid you welcome! and thrice welcome

comes from the sweet lips of hospitable matron and maid. Our doors are all open to you, though you should have a care to wear your raincoat when entering past yellow placards.

Take possession, and raise an Ebenezer that shall be remembered throughout the ages.

RESPONSE TO ADDRESS OF WELCOME

Dr. W. S. Rankin, Secretary of the Association, in the absence of Dr. D. C. Absher, who was to have responded to the address of welcome made an impromptu response.

PRESIDENT'S ADDRESS

L. B. McBrayer, M.D., Asheville.

I congratulate the Health Officers of North Carolina, and others interested in public health, on the convening today of the Second Annual Session of the North Carolina State Health Officers' Association, in the beautiful city of Hendersonville.

I desire to express to you my appreciation of the honor you conferred upon me by electing me to the high position of first President of your Association. And while I have not been unmindful of the honor thus conferred, at the same time I have not failed to realize that this high honor carried with it an equal amount of duties and responsibilities. You intrusted to my care and keeping for the year that is now closing, this infant organization still swathed in swaddling clothes. I sincerely trust that we will have abundant evidence here today that this babe has grown into a healthy, vigorous, lusty youth, ready to do battle in the cause of public health, and to take its place as an important unit among the factors that shall soon make our grand old State the healthiest and best place in all this world in which to live; and shall soon make our people, our children and our children's children a "Race of godlike Americans, perfect in face and form and intellect."

The Health Officer is the keynote, the cornerstone, the capstone, the key to the arch in public work. You will all recognize the familiar quotation, "Paul may plant and Apollos may water, but God alone can give the increase." And so in health work; we may have our Rockefeller Institute for Medical Research; we may have, some time, if you please, our National Department of Health; we may have our State Laboratory of Hygiene; we may have our splendid State Board of Health, composed, as it is, of the ablest men in our

commonwealth, in our profession or out of it, we may have our splendid and efficient Secretary of the State Board of Health, and his able assistant for the eradication of Hookworm disease, and other assistants; we may have our National Association for the study and prevention of Tuberculosis, and our International Congress of Hygiene and Demography, and our Child Welfare Societies, and our hundreds of other International, National, State and Local Societies, Civic Associations, etc., but all this without the Health Officer would be of little or no avail.

The Health Officer must "carry the message to Garcia"; the Health Officer must take the accumulated wisdom of the ages; he must take the valuable information worked out by the agencies mentioned, and many others unmentioned, on preventive medicine, hygiene, sanitation, eugenics, and allied subjects, and carry it to the people. He is the connecting link between all this fund of accumulated information and the people, for whom it is intended, and to whom it rightfully belongs.

What would "the message to Garcia" have been worth had it never reached him? How would it ever have reached him without the man to carry it? Who is to carry the Gospel of sanitation and good health to our people? The Health Officer, if it is ever done. Who is to go into our schools and examine the dullards, the backward children, the ne'er-do-wells, and make out of them, ofttimes, bright, intelligent, tractable, cheery children, and in the fruition of time, good, useful, happy citizens instead of ignoramuses, paupers and criminals? The Health Officer, if it is ever to be done.

Who is to study the incidence of the preventable diseases in your county and mine, in your town and mine, among your people and mine, among your children and mine, and put into practical use the known means of preventing these diseases and save the lives of our people, of your children and my children? The Health Officer, if it is ever done.

Is there any reason why a certain town in this State should have a death rate four times as high as the one-time pest ridden Canal Zone? Is there any reason why in a certain town in this State in a family of eight all of them would be dead, which in the same period if they lived in the one-time pest ridden Canal Zone, six of them would be alive and in good health? There is no reason except that in the Canal Zone the Health Officer, that Prince of sanitarians, Dr. Gorgas, has sufficient authority and money to carry into effect proper health measures, while in the town under consideration, the Health Officer has neither authority nor money. Do you think intelligent people will continue to live in a town where they know for a certainty that their family will be exterminated by preventable diseases four times or three times as quickly as in a certain other town? The same is true of a county or a State. Who is going to change this sad state of affairs. The Health Officer, if it is ever done.

The Toledo (Ohio) Blade, has well said, "The conservation of public life is becoming a great social question, one in which society is taking over responsibilities and functions left heretofore in the hands of the individuals." Public Health is not altogether an individual matter any more, but it is a community interest. All the conditions of life and of living enter into the causation or suppression of disease. Many of the factors are beyond the control of the individual. They can only be controlled by society acting in an organized and effective manner; that is, by the State; but the State can delegate part of its power, authority and detail work to the county or municipality.

There is an awakening of interest among the people in regard to public health such as has never been known on any other subject. It is impossible to calculate the potentiality of the energy that is being expended today in the prevention of disease, and the perfecting of the human race. It has not

reached its flood tide. The many congresses, commissions, societies, etc., referred to a moment ago, bear out the statement. It is necessary that this energy shall be directed in proper channels, in channels that will produce results. It would be fatal to our cause to allow this energy to go to waste. If this energy is wisely directed, it will only be a short time until we will have all the money we need to prosecute our work. States, including our own, are making appropriations never dreamed of a few years ago, and are ready to increase these appropriations just as soon as we show them that we are producing results with what they have given us, and can show them intelligently and specifically that we need more.

The United States Government has been doing some public health work through its Department of Agriculture, which, of course, was never organized for the purpose of improving the health, and thereby lengthening and making more profitable and happy the lives of our people, but was organized for the purpose of protecting the lives of our farm animals, and protecting and making more prolific our fruits and forests, and making the seed we plant more fertile.

Another branch of the United States Government that has taken up public health work, all of its own accord, because the splendid men, the loyal, faithful doctors that man this service could not keep out of it, is the United States Public Health and Marine Hospital Service. The United States army has also done valuable work in the cause of public health; and I might mention others, but this is sufficient to prove to you that while the United States Government, as I say, has been doing some public health work, yet it has done it mostly because men, for the most part doctors, be it said to the credit of our profession, could not and would not stand aloof from it, and not because of any fixed policy of our government; not because any department has been charged with this particular work. In other words, these various departments and bureaus

have enlisted, and have been doing valuable service in the cause of public health, in spite of the government, as it were.

But the time is coming, in fact is near at hand, when we shall have a Department of Health in our National Government, with a Secretary who is a member of the President's cabinet. And I trust the North Carolina State Health Officers' Association will, at this meeting, pass a strong resolution endorsing this measure that is now pending before Congress. And when that bill, known as the Owens Bill, or some like measure, is passed, and not until then, will our government begin to do public health work in an organized way, as it ought to have been doing these many years. Our National Government should have been leading in this matter, instead of holding aloof until it was veritably pushed into it by the enthusiasm of the people. Why, it is a matter of fact, gentlemen, that our great government thought that the war with Spain over the island of Cuba, was something great and wonderful. And it was, because, on account of that war, and while the army of occupation was still in control of the island, four members of our medical profession discovered the method of transmission of yellow fever. And that discovery is worth more to humanity than all the conquests of war since the foundation of the world. And, gentlemen, you are not inadvertent to the fact that the work incident to this great discovery was done on the side, so to speak, without the knowledge or consent of our government. Such things will not obtain when we have a National Department of Health.

The enthusiasm for the cause of public health has at last reached the ear and the heart and the purse of our millionaire philanthropists. In the time of Jenner, a little more than a century ago, and for several decades thereafter, the Physician was compelled to conduct all studies and experiments, notwithstanding they were for the benefit of all the people, on his own time and at his own expense. In European countries if he

were successful, and made some great discovery that would save millions and millions of lives, and millions and millions of money, the Government might vote him a goodly sum, and perhaps bestow upon him a bounty, but not so in the United States. And so it came to pass that little of this kind of study and research was done in this country until within the last few years when our people became more wealthy, and individual men of wealth began to recognize the ability and worth of our own people, and to endow the medical colleges. A few years ago the great philanthropist and public benefactor, John D. Rockefeller, organized and provided for its perpetuity, an institution known as the "Rockefeller Institute for Original Research," and from which much good, and several important and valuable discoveries have already emanated. Following this came a gift, from the same source, of one million dollars for the eradication of the hookworm disease, the fruits of which we are enjoying in North Carolina today, and will enjoy for all time to come. Contemporaneously with these came the establishment of the Phipps Institute in connection with the University of Pennsylvania for the study of tuberculosis. Another great philanthropy is the splendid work of Nathan Straus in New York City in reducing the death rate among infants, and in making possible what is known as certified milk, with particular reference to infant feeding.

I might mention many more, and all of them made possible by the work of our noble profession, especially that part of it specifically interested in the cause of public health, and that too without reward or hope of reward, save the reward of a consciousness of duty faithfully performed.

But the great philanthropies that have been expended in the cause of public health in the last few years are but an earnest of what is to come, provided the energy and enthusiasm of our people in the cause of public health are directed along

proper channels. And who is charged with giving this energy and enthusiasm proper direction? The Health Officer. The Health Officer is captain of the hosts, and must lead them to victory or defeat. Need I say more to impress upon you the importance of this Association, and the importance of the Health Officer? It is high time we Health Officers were taking an inventory of ourselves, and thereby ascertaining whether or not we are fully competent for the task that is set before us. If not, we must either make ourselves competent or resign our office and put someone in command who is competent.

We cannot magnify too highly the Health Officer and his work. It is a great achievement to make two blades of grass grow where only one grew before. It is a great achievement to make an acre of ground produce 100 bushels of corn where it only produced ten before. But what good can it do you when you are dead? It is a great thing to link two oceans together by steel rails; but you won't care to ride on the train when you are dead. It is a great achievement to link two oceans together by the Panama Canal; but what will you care about it when you are dead? It is wise and proper that Congress should appropriate one hundred million dollars for good roads, and that States and counties should use their convicts in building good roads, and that the counties, towns and townships should issue bonds and use the proceeds in building good roads, but the roads won't be worth anything to you when you are dead. It is wise and proper that our government should look well to the conservation of her natural resources, the conservation of her forests, the conservation of her water powers, the conservation of her coal fields, the conservation of her soil; but these while important, are insignificant when compared with the conservation of human life.

In the economics of a nation there is nothing so important as the conservation of human life. It has been well said by Senator Owen, that "the conservation and efficiency of our

people is a problem of the first magnitude, demanding immediate and intelligent attention." And by Sir Frederick Treves, that "health is the essential factor in productiveness, prosperity and happiness, and hence in the advancement of civilization." And by Lord Beaconsfield, that "public health is the foundation on which reposes the happiness of a people and the power of a country. The care of the public health, then, is the first duty of a nation," And by Mr. A. H. Eller, Chairman of the State Democratic Executive Committee, of this State, that "the lives and health of the people stand first among all the duties which an intelligent State owes to a loyal citizenship. Grander conceptions of human worth demand that preventable diseases be subdued as the common enemy of all."

If all these things be true, and they are true, then who would dare minimize the importance, the work, the responsibility of the Health Officers? What town council, what board of county commissioners, would dare tie the hands of their Health Officer by refusing to make a sufficient appropriation to enable him to carry this message of life, health, happiness and prosperity, to all the people of his town and county? Who would dare suggest that a Health Officer do this most important work as a labor of love? Who would think for a moment that a matter of so great and far-reaching importance would occupy less than the entire time and energy of the best man that could be produced?

If this organization shall make better, more efficient, more energetic Health Officers in North Carolina, if it shall awaken an increased interest and enthuse a more intelligent activity into the teachers, members of boards of health, boards of commissioners, boards of education, town councils and other health workers in our State, if it shall thereby reduce the death rate and the incidence of disease in our State and thus increase the productivity, the happiness and prosperity of our citizens, it will not have lived and wrought in vain. To that end let us ever strive.

REPORT OF THE SECRETARY-TREASURER OF THE NORTH CAROLINA HEALTH OFFICERS' ASSOCIATION.

Mr. President and Gentlemen:

Section 4, Article 5, of the constitution, says: "That the Secretary-Treasurer shall keep an accurate record of all meetings of the Association, prepare and distribute suitable programs, receive and disburse all funds as directed by the Association, and perform such other duties as are incident to his office." The minutes of the last and only meeting of this Association will be read by order of the President at the completion of this report.

The programs which you will find distributed in the seats have been mailed to all the members of local boards of health, county and municipal, in the State, as well as to all health officers, and an abstract of the program with a notice calling attention to the importance of this meeting was sent to all the newspapers of the State. President McBrayer issued a strong appeal to county commissioners and boards of health on April 15th, asking that they send delegates, at the expense of their body, to this Association. On April 6th, the President and Secretary of this Association wrote the Secretaries of every County Medical Society in the State enclosing a copy of resolutions which they requested that the County Society pass. These resolutions called upon County Boards of Health and the County Commissioners to send their County Health Officer to this meeting. On May 2nd, the Secretary again wrote the Chairmen of all the County and Municipal Boards of Health, calling their attention to the importance of this meeting, and urging them to take some action looking to the sending of a delegate, at the expense of their Board, to this meeting. On the same date the County and Municipal Health Officers were notified of this letter to their Boards of Health, and their co-operation in securing favorable action by the Local Boards of Health was requested.

At the last meeting there were eighty-two present. There are forty paid up members of this Association. I presume that only those who have paid their annual dues could be considered as members, at least this would appear to be the proper construction of Sections 2 and 6 of Article 2, of the Constitution. We wish to urge that those who have not paid their dues for last year, and who wish to be regarded as charter members of this Association, hand the Treasurer $1.00 on the adjournment of this session of the Association this morning, and also that those desiring to be enrolled as members for the coming year hand in their annual dues of $1.00. We have collected, altogether, $40.00, every cent of which we have on hand.

REPORTS ON COUNTY HEALTH WORK BY COUNTY SUPERINTENDENTS OF HEALTH

In accordance with item nine of the program the Health Officers' of the various counties were called in alphabetic order for a report of the health work accomplished in their respective counties during the past year.

The following counties were represented and reports were made through their County Superintendents of Health:

Brunswick County.

Dr. J. A. Dosher, County Superintendent of Health.

Present, but made no report.

Buncombe County.

Dr. D. E. Sevier, County Superintendent of Health.

Mr. President, Ladies and Gentlemen:

With your permission Buncombe County Superintendent of Health desires to submit the following report as to the various institutions and contagious and infectious diseases of said county.

The Health Officer has under his care and supervision the county jail, with an average of twenty-five inmates a month; the Childrens' Home, with an average of fiftten; the Boys' Reformatory, with an average of ten; the County Home, with an average of fifty inmates; and two convict camps, with an average of seventy-five inmates per month, besides the examination of all applicants for exemption, and the supervision and quarantining of all contagious and infectious diseases of the county.

The above named institutions are visited each week, and daily when an inmate requires medical attention. At this time they are all in good health and the sanitation good.

Soon after the no-quarantine law for smallpox went into effect, your County Health Officer went before the County Commissioners and asked that they issue an order requiring the Superintendents of all county institutions to assist the County Health Officer in vaccinating the inmates of said institutions which was promptly complied with, and it was at this time the guards were advised and urged to be vaccinated, but with no avail, all turning a deaf ear and arguing that Dr. —— had stated vaccination was not an absolutely positive preventive.

About the middle of March three convicts were sent from Madison county to the Buncombe county chain gang, and placed in the cell with

the other convicts before they had been inspected by the Buncombe County Health Officer. About thirty-six hours later the Health Officer was called and asked to respond at once, which he did, and on his arrival at the camps found one of the Madison men broke out with smallpox, and the other two men with all symptoms of smallpox. The man broken out stated that he was breaking out when he left Madison.

During this time they had mingled with the other convicts. The guards at this time were very much frightened and insisted that they be vaccinated, with two exceptions, one giving up his position, and the other still arguing he could prevent smallpox by eating sulphur and cream of tartar. Later this man developed smallpox and was the only man that contracted the disease, and had been the least exposed.

I am thoroughly convinced by actual experience that the present law as it now exists is the best for our commonwealth, and puts every law abiding citizen on the watch for smallpox and other contagious and infectious diseases.

Buncombe has handled seventeen cases of smallpox, three cases of measles, six cases of scarlet fever, and fourteen cases of diphtheria during the past year, and at present the county is free from all.

I find that measles and whooping cough are not reported for the simple reason very few cases are treated by physicians.

Last summer your County Health Officer visited the various school buildings of the county, numbering one hundred and five, finding many of them in bad sanitary condition, many being without sanitary surface closets, and the drinking water supply with drainage overflow from the grounds surrounding the school buildings, where no closet was found.

The grounds as well as the buildings were ordered cleaned, many sanitary closets erected, and many springs abandoned and wells dug and covered with concrete.

The Health Officer advised that each school building be fumigated, which met with the hearty approval of our most excellent County Superintendent of Public Instruction, Prof. A. C. Reynolds, which could have been done at a reasonable fee, but was not complied with owing to the school committee being short on funds. I have thought, and still think, this would be a wise step and money well spent.

The Chairman of the Board of Education, Mr. Geo. S. Powell, has been more than active and rendered great assistance in placing sanitary closets and improving the drinking water supply, and has visited several of the schools with your Health Officer. As a result of this inspection of the schools I am confident we have improved the sanitary condition and lessened the spread of typhoid fever throughout our county.

The same inspection will be made this summer, and if possible each school building will be fumigated and a sanitary closet established at

each with a rigid inspection as to the water supply, having all springs abandoned where they catch the overflow from the grounds surrounding the school buildings.

On the establishment of the West Asheville Board of Health, your County Health Officer has been working hand in hand with them. We have had the hog pens moved to a reasonable distance from the streets and main thoroughfares, and have also checked the dumping of garbage along the public roads which has added greatly to the sanitation of our County. Have also inspected the principle watersheds. In conclusion I wish to make mention of the sanitary condition of Asheville, now under the supervision of our worthy City Health Officer, Dr. L. B. McBrayer, who has done more for the upbuilding of the health department than any of his predecessors, unless it was Dr. M. H. Fletcher, who so ably and successfully vaccinated the city.

Much credit is also due alderman W. R. Patterson, now Chairman of the Sanitary Committee, who has been instrumental in getting the sanitary appropriations increased from fifteen thousand to twenty-five thousand dollars for the city of Asheville alone.

I believe the city of Asheville today is in a healthier condition than ever before, and that the surrounding county is equally as good.

In canvassing the county it was gratifying to find the many citizens in the rural districts better posted as to sanitation than citizens in our city, or those who had better advantages. They were ready at all times to assist, and eager for instructions and lectures and insisting that their neighborhoods be visited as often as possible.

Camden County.

Dr. W. W. Sawyer, County Superintendent of Health.

The county authorities have decided to place sanitary privies at every public school house in the county.

Cherokee County.

Dr. J. N. Hill, County Superintendent of Health.

Health Officer present and made favorable report, but has not responded to written request from the Secretary to furnish an abstract of his report.

Columbus County

Dr. H. B. Maxwell, County Superintendent of Health.

Dr. Maxwell reports very little yet accomplished. Superintendent of Health's salary has been increased from $10.00 to $500.00 a year. He is required to visit all the public schools of the county and inspect the school children and grounds once a year. An ordinance has been enacted abolishing hog pens from the county seat. A regulation relating to surface closets in the county has also been enacted.

Cumberland County.

DR. WILLIAM S. JORDAN, County Superintendent of Health.

Health Officer present and made favorable report, but has not responded to written request from the Secretary to furnish an abstract of his report.

Davidson County.

DR. D. J. HILL, County Superintendent of Health.

Health Officer present and made favorable report, but has not responded to written request from the Secretary to furnish an abstract of his report.

Davie County.

DR. J. W. RODWELL, County Superintendent of Health.

Dr. Rodwell reports little accomplished along the lines of health in Davie county during the past year. He states that a considerable amount of public health literature, obtained from the State Board of Health, was distributed and believes that in that way some good was accomplished.

Durham County.

DR. N. M. JOHNSON, County Superintendent of Health.

The Health Officer reports that every public school building and grounds in the county was inspected during the past year, and a number of changes for better sanitation recommended; a number of talks to the public schools were made, and some of the school children were examined for defects. A number of circulars relating to hygiene ana sanitation were distributed through the school children. An effort to secure sanitary privies at all public school buildings has been made. Progress is being made in beter care of prisoners and dependents. An $8,000.00 prison is being built at the County Home. A part of this building will be in the nature of a hospital for the care of the sick. There has been a noticeable decrease in the number of cases of contagious diseases.

Forsyth County.

DR. JOHN BYNUM, County Superintendent of Health.

An ordinance requiring the vaccination of all school children before entering the schools next fall has been enacted. A strong effort with a promise of success is being made to induce the county authorities to employ a superintendent of health for his entire time. It is very probable that the county will have an appropriation for the hookworm dispensary work.

Gaston County.

DR. L. N. GLENN, County Superintendent of Health.

Health Officer present, but does not furnish copy of report.

Gates County.

DR. G. D. WILLIAMS, County Superintendent of Health.

Present, but not reporting.

Granville County

Dr. S. D. Booth, County Superintendent of Health.

The county authorities have enacted an ordinance requiring the reporting of all births. They have enacted another ordinance requiring the registration of all midwives; another ordinance requiring the vaccination of all school children living in school districts wherein a case of smallpox appears has been enacted. An ordinance prohibiting the placing of the carcass of any animal on the top of the ground within one-quarter of a mile of any residence or road has been enacted. It has further been ordered by the authorities of the county that all privies in all incorporated towns of the county be screened from flies.

Greene County.

Dr. W. B. Murphy, County Superintendent of Health.

Health Officer present but did not make any report.

Guilford County.

Dr. G. Floyd Ross, County Superintendent of Health.

Health Officer present and states that his report will be included in paper which follows.

Haywood County.

Dr. J. R. McCracken, County Superintendent of Health.

Health Officer made favorable report, but on written request of the Secretary has failed to furnish an abstract of his report.

Henderson County.

Dr. J. S. Brown, County Superintendent of Health.

Health Officer present but has failed to furnish an abstract of his report.

Iredell County

Dr. A. Campbell, County Superintendent of Health.

Health Officer present but made no report.

Johnston County.

Dr. A. H. Rose, County Superintendent of Health.

The county authorities require the County Superintendent of Health to visit the ten incorporated towns of the county quarterly and to make a sanitary inspection of them. He is also required to visit every graded school in the county and examine as many defective children as his time will permit.

Mecklenburg County.

Dr. C. S. McLaughlin, County Superintendent of Health.

Health Officer present but made no report.

Montgomery County.

Dr. C. Daligny, County Superintendent of Health.

The county authorities have required the erection of sanitary privies at all public school houses in the county; have added typhoid fever to the list of reportable diseases, and the county town has inaugurated a

"clean up week." The County Superintendent of Health has made talks on sanitation in two of the county towns.

Rockingham County.

DR. SAM ELLINGTON, County Superintendent of Health.

Two epidemics of smallpox and three of scarlet fever have been successfully controlled during the past year. Spray is becoming one of the healthiest mill towns in the State. There has been much improvement in the sanitary condition of the dairies in Rockingham county. Water coolers have been installed in all of the schools, both white and colored, of the county.

At present a determined effort is being made to have a large dam removed from Haw River, and the health officer is sure that this will result in great benefit to the public health of the county.

Rowan County.

MR. P. B. BEARD, Chairman of the Board of County Commissioners. (Delegate).

Mr. Beard reported that the people of Rowan county were becoming very much interested in matters of sanitation generally. Mr. Beard discussed the Dacro system of closing milk bottles and strongly recommended its more general use.

Sampson County.

DR. GEORGE M. COOPER, County Superintendent of Health.

The Health Officer reports that smallpox has been successfully managed under the "no quarantine law." The Health Officer says he is unable to enforce quarantine of measles and whooping cough.

The county institutions are kept clean and sanitary. The county medical profession is deeply interested in health matters and cordially co-operative. The Mayor of the county town is a progressive man, thoroughly abreast of the times, and is in hearty sympathy with the enactment and enforcement of the health laws. The Civic League is responsible for an annual "clean up day" in the county town.

The hookworm dispensary work has been carried on in the county during the last year, and has resulted in untold good. The great need of Sampson county is a vital statistics law and a whole time Health Officer.

Stokes County.

DR. J. W. NEAL, County Superintendent of Health.

The common drinking cups have been abolished from many of the public schools. A new County Home with all modern and sanitary conveniences is in contempltion.

Wake County.

DR. J. J. L. MCCULLENS, County Superintendent of Health.

Mr. President: As is well known, Wake county has been forced to test the validity of the health laws of North Carolina, McCullers vs.

Commissioners. We are well pleased to say that the Supreme Court upheld the law and sustained the appointment of the Secretary of the State Board of Health. During the litigation the health work was sadly neglected, no inspections made, and no legal report made as to sanitary conditions, which became very bad. Since the decision of the Supreme Court, the Chairman of the Board of Commissioners, who was the chief impediment to the advancement of health work, has resigned, and in his stead we have had one of the most progressive and capable men in the county appointed, Mr. John A. Mills. Our new Chairman is in hearty sympathy with all the efforts of the Superintendent of Health to improve the health and sanitary condition of the good old mother county. We have instituted a new system to improve the very unsanitary conditions of our jail. We have purchased two suits of clothes for each prisoner at a cost of $1.35 per suit, and each prisoner is required to have his hair clipped and to take a bath at least once a week. We require all prisoners before entering the jail to have their hair clipped, take a thoroughly sanitary bath, and change all clothing. If he has a venereal disease he is not allowed in a cell with other prisoners, but is confined in a separate cell set apart for such cases. We hope by rigid enforcement of the above rules to soon have our jail second to none in the State as to comfort and sanitation. We are working under the fee system, as suggested by the State Health Officers' Association, which we think is a fair and just compensation for the work done. I am pleased to state that our Board, as now composed, is in hearty accord and full sympathy with the best efforts of the Superintendent of Health along all lines of preventive medicine and sanitation for the county at large, as well as the various institutions of the county.

Warren County.

Dr. M. P. Perry, County Superintendent of Health.

Present, but made no report.

THE FULL TIME COUNTY HEALTH OFFICER—THE MOST IMPORTANT FACTOR IN THE PUBLIC HEALTH MACHINERY.

WARDELL STILES, LL.D., PROFESSOR OF ZOOLOGY, U. S. PUBLIC HEALTH AND MARINE HOSPITAL SERVICE.

Public health work consists of two kinds of education: (1) education by instruction, corresponding in general to the methods followed in our school system; and (2) education by coercion, corresponding in general to the methods followed by the police authorities.

In considering any plan of organization of our public health forces, it will be well to hold this comparison in mind, and since we are in our infancy in public health development it seems probable that we may learn some important practical lessons in organization by studying the two other departments referred to, namely, the machinery of the departments of public instruction, and the machinery of the policing departments.

The policing bodies consist of different units, one or another of which comes into activity according to circumstances. If a thug attacks us, we as individuals, protect ourselves as best we can, and if necessary, we call upon the local police or the county sheriff for aid and protection. If local authorities exhaust their efforts in riots of lawless people and are unable to give protection to life and property, the State comes to the aid of the county or city, but note the important point that the State does not interfere until requested by the local authorities, or until the local officers prove themselves inefficient or helpless. If the State forces are unable to handle the difficulty, or if Federal property is involved, the National Government is called upon for aid or enters the field of its own accord. If

foreign or interstate matters are involved, the questions at issue become national in scope and the Federal Government takes the lead.

Please note the very important point that in the inter-relation of these protecting or policing units we have proceeded from the lower to the higher, namely, from the individual through the city or county, and the State, to the National Government, and that in general each of the smaller units (except the individual, which is not really a policing unit), exhausts its resources or feels the need of more expert knowledge before it calls upon the next higher unit for aid. In other words, in general, each higher unit does nothing that can reasonably be left to a lower unit to perform.

This same general principle of division of labor is seen in the organization of a regiment of troops: The Colonel (a regimental commander), does not perform duties that belong to the Majors (battalion commanders), and the latter do not perform duties that belong to the Captains (company commanders).

The same general principles obtain also in the organization of our school machinery. A teacher instructs the pupils. A principal has administrative charge of the teachers. A city or county superintendent is the real executive unit of great importance when it comes to effective general, uniform, and vitalizing work in the schools; he is or should be the real administrative pivot of the educational system, although the teacher is the pivot in the actual retailing of knowledge to the pupils. The State office of education is really a big educational clearing house more than anything else; it is an expert-advice office, a dynamo-center for inspiration, with certain additional functions rendered necessary especially because of the distribution of State funds, the consideration of State-wide problems, and the enforcement of certain State-wide laws or regulations; it may, as in this State, be a stupendous

factor for good, but after all that good is limited or extended according to the ability of the county or city superintendents.

The Federal Bureau of Education has not played a dominant role in the education development of the country and commencing with the States our school machinery corresponds in a general way with the organization of our policing system, namely the entire tendency is to divide, standardize, and vitalize the labor, not to concentrate it; the tendency is to delegate as much of the work as feasible to the lower units of organization, to create as much local enthusiasm, effort, pride, and responsibility as possible.

The first conclusion of importance that I wish to draw is that since public health work involves educational work and policing powers, it belongs, according to the Federal Constitution, primarily to the States, and in making up our public health machinery we will do well to pattern it, in general, after the plans adopted by the police and the educational forces, a plan justified by experience, rather than to make an effort, contrary to precedent and law, to shift State and local responsibilities to the Federal Government.

There is a widespread demand today for a Federal Department of Public Health, and the Department of Agriculture is cited as example of what may be expected to result if a Health Department is created. Long lists of statistics of preventable deaths are cited in proof of the necessity of the proposed department.

Today, I do not propose to argue the pros and cons of the subject in detail, but I will touch upon it so far as to state that the establishment of such an organization will not result in any automatic decrease in deaths among the babies of this land who become infected with disease germs from the miserable surface privies over which, because of the division of government functions, that department would not, from the very nature of things, have any control except under extra-

ordinary circumstances such as in time of epidemic. (Those privies come under the control of the city or the county Health Officer, and I venture to believe that if the Federal Government undertook today to compel Charlotte, Durham, Raleigh, or Wilmington, to do away with the dirty, filthy, disease-spreading surface privies that are daily supplying the food of the inhabitants of those cities with human excrement from both whites and negroes, the Senators and Congressmen of this State would be deluged with telegrams of protest against what would be called an illegal and unjustifiable interference by the Federal Government in local affairs. The whites and the negroes of those and of other similar cities and towns are not eating at the same daily dinner table, but they are daily supplying each others' tables with human excreta, and to a certain extent it is their local privilege to continue this highly refined diet as long as their intelligence or their appetite dictates. When they finally satisfy their appetite, it will devolve upon the local Health Officer, not upon a Federal Department of Health, to reduce the unnecessary deaths in these cities by advancing the sanitary arrangements to correspond with the knowledge of the present generation regarding the prevention of disease).

* * * * * * * * *

The surface privy and human excreta, rather than a less visible and more abstrusive subject, have been used to bring out the point at issue. Let us follow the point further.

(I do not mean to assert that all the whites and all the negroes of Charlotte, Durham, Raleigh, and Wilmington, really prefer the excreta of their own race or of the opposite race, as a daily condiment, but that the sanitary conditions of these cities as I last saw them seem to indicate that the majority of the inhabitants of these towns have not yet awakened to the nature of their daily food. Somebody must instruct these

deficiently trained intellects as to just what is happening.) . . . . As a practical proposition, is this the duty of the Federal Government or of the Local Health Officer? If the Local and State Officers are subnormal in intelligence or in activity, or if they meet with such stubborn incredulity on the part of the inhabitants, that they request aid from the Federal Government, then it seems perfectly proper for a Federal Officer to respond to the request, but I submit that the more this work can be done by local officials the better.

(Let me assume now that the teachable whites and the teachable blacks are all taught the danger of their present daily fecal diet. There will still remain some landlords and some tenants who are either so abnormal in intelligence or super-abnormal in greed for gold, and so deaf, dumb, and blind as to their duties to their fellowmen, that they will have to be coerced into giving up their daily fecal diet and into refraining from distributing this diet to their neighbors.) . . . . Here again the Local Health Officer comes into play.

A city does not, theoretically, need a County Health Officer to attend to its strictly urban affairs, although it may occasionally happen, as is happening at Wilmington at present, that the County Health Authorities may have to step in and dictate to the city. Nor does a county theoretically need a City Health Officer to help run its strictly rural county health, although in our present conditions some City Health Boards have been compelled to regulate the sanitary conditions of farms from which milk is shipped to the city. The city and county health are in spirit, however, one, and inseparable and interdependent.

There are circumstances when the only Health Officer in the county, will, of necessity, be the county officer; there are other conditions when the only Health Officer in the county will, of necessity, be the City Health Officer. I can conceive of conditions when it would be best to unite these two offices in one

man. But be he City or County Health Officer, I contend that theoretically he is the most important factor in our entire public health organization, that practically he is at present, generally speaking, the weakest element in our organization, and that our death rate will not be reduced to its normal condition until the position of the Local Health Officer is strengthened to correspond to the other two men with whom he can best be compared, namely, the sheriff (or the chief of police), and the county (or city) superintendent of education.

In building up these positions, we may have certain ideals before us and we must face certain difficulties. The subject is too extensive for me to exhaust it in this paper, but I would like to suggest the following thoughts for your consideration.

First: In speaking of Local Health Officers (county or city), I am not arguing in favor of the physician to the poor, namely of a physician who doctors the sick poor and the sick criminals, but rather in support of the man who prevents disease and who thereby reduces poverty and crime. The duties that a local Health Officer should perform are so manifold and so time-taking, that if he performs them properly he will not have time to doctor people, rich or poor.

Secondly: Exactly as the public should not expect proper unbiased police protection if the chief of police (or the county sheriff), is distracted from his public duty by private enterprise, and exactly as the public should not expect uniform supervision of the public schools if the Superintendent of Education is distracted from his public duties by private commercial undertaking which will naturally have first place in the mind of the average person, the public should not expect proper service from a Health Officer whose attention is divided between his public duties and his private practice.

It may be admitted that there are many Local Health Officers who are today doing good work despite the fact that they are dependent upon their private practice for support, but it may

be submitted that this good work is due to the noble-mindedness, patriotism, and self-sacrifice of these men, rather than to any rational grounds the public has to expect the service from them. It may be admitted that there are a few men in whose cases it would be feasible for them to enforce police regulations of a disagreeable nature upon the families they are serving in capacity of family physician, but it must be submitted that these are exceptions and not the rule.

As all important to a proper protection of the public health, I contend that Health Officers should be full time men, such as now exist in Durham, Guilford, New Hanover, and Robeson counties, and in Wilmington.

Thirdly: To obtain full time men, we must give full time pay. This is such an important point that it deserves a paragraph all to itself. I would much prefer to have a full time, $1,200 man, as Local Health Officer, rather than part of the time of a $5,000 man.

Fourthly: In general, subject of course to some exceptions, the public is going to receive the services for which it pays, and no more. As a general proposition I would say that no City or County Health Officer should receive less than $2,500 salary. There are, of course, instances where able men are willing, from humanitarian or patriotic motives, to serve for a lower salary; and there are of course cases where an able man can be obtained for less than $2,500 per year. But the service is worth at least $2,500 in salary, and any self-respecting city or town that can afford to pay that salary ought not to offer less, and larger cities should pay from $3,000 to $5,000, according to the service rendered. For a combined City and County Health officer, the minimum salary should be $3,000. Sparsely settled counties not infrequently are sparsely settled because of poor health conditions. These counties would make a good business investment if they would appoint an active, full-time, County Health Officer.

Fifthly: One of the most important points to overcome is our more or less widespread idea that local positions should be filled by a person born and bred in the place and whose mental horizon is limited by the geographic limits of his town or county. If a city or county wants a good Health Officer, why limit the choice to men living in that limited locality? Such limitation is a short-sighted business policy. If a business firm is looking for a manager, does it limit its choice to men who were born and reared in a given town? If a church is seeking a pastor, does it limit its choice to its own congregation?

One of the most concentrated pieces of imbecility I have ever witnessed occurred last summer when some of the citizens of Wilmington attempted a recall of the city government, giving as one of the charges against the officials that they had engaged an outsider as City Health Officer. The outsider in question is a former army medical officer who had been practicing medicine in Wilmington about four or five years. Business short-sightedness would be too flattering a term to use for such slobbering twaddle as these citizens advanced; imbecilic political prostitution would come nearer the truth.

Sixthly: Happenings in this State during the past two years have shown rather clearly that it is wise to provide that the State Board of Health should have some power in respect to local Health Officers. Could it not have more power in this respect than it has at present? The States contribute money toward local schools and the office of the State Superintendent of Education has certain functions in respect to those schools. Would it not be in the interest of the public health if the States were to prescribe a minimum salary of say $2,500 for Local Health Officers, should contribute say $500 of this amount from State funds, and should provide that the man selected by the local authorities should measure up to certain standards prescribed by the State Board of Health?

Naturally it is not to be expected that a proposition of this kind will be welcomed by the average American politician, but as it is in the interest of the lives of American babies, rather than in the interest of politicians I am speaking, I venture to make the suggestion and will leave the political side of the subject to that newest and present-moment National disgrace, the political prize ring in Chicago.

Seventhly: While it is chiefly from a humanitarian point of view that I argue in favor of the full time Health Officer, I do not consider it out of place to say that the intelligent full time officer is a good financial investment and will save the county (or city) much more money than he receives in salary.

Assuming that each county were to have a local, full time, efficient Health Officer, as suggested, the question naturally arises as to the relation these men should bear to the State Health Officer. Replying in general to this point, I would say that the Raleigh office would become first of all a big clearing house for public health matters in the State; it would become an even more important advisory office; it would still have supervision over various State-wide problems, but it would have less of its time taken up by matters which could and would be equally well handled by the Local Health Officers; it would increase in importance and value, from every point of view.

In conclusion, I wish to congratulate Doctor Rankin on the vigorous way he is taking up this Local Health Officer problem. I want to congratulate the State Board of Health upon having a Secretary whose mental horizon is not limited by his views of the importance of his own work, but who has been one of the first persons in the country to grasp the solution of the important problem of our public health organization.

I want to congratulate the city of Wilmington, and the counties of Durham, Guilford, New Hanover, and Robeson, for the advanced position they are taking in public health

matters. And though my sympathy has not been asked, I take the liberty of condoling with the city of Durham for the unenviable reputation it has won by the way it treated one of the best Local Health Officers this State has ever had. It might be mentioned incidentally, that a certain city in Georgia has been intelligent and business-like enough to import from Durham this same Doctor Mann, in order that he might introduce into this Georgia city the very health reforms which rumors indicate were too up-to-date and too cleanly for the property owners and business men of Durham.

WHAT THE ROCKEFELLER SANITARY COMMISSION CAN DO TO BUILD UP COUNTY HEALTH WORK.

JNO. A. FERRELL, M.D., ASSISTANT SECRETARY TO STATE BOARD OF HEALTH FOR HOOKWORM DISEASE.

Gentlemen:

What the Rockefeller Sanitary Commission can do to build up county health work is the subject assigned me by your program committee. The Commission is vested with authority to use the donation of Mr. Rockefeller, not to fight tuberculosis or typhoid fever, or to subsidize the salary of any health official doing general work; but the express purpose, as the name of the Commission implies, is "the eradication of hookworm disease." Insofar as the eradication of hookworm disease in a county will build up county health work the Commission is free to act.

The Commission has been true to its trust, has devoted itself to fighting hookworm disease, for which purpose it was created, and has freely expressed itself, as has also Mr. Rockefeller, as highly gratified with the definite results thus far obtained—results of such magnitude that no other health work in the South or Nation—able authorities say—is comparable to it.

Yet John D. Rockefeller in restricting his gift to one disease, and limiting the Commission he created to this one disease, was not forgetful of other diseases nor the strengthening of State and county health work. In a long and profitable experience with petroleum he had learned that the by-products of his industry rival in importance the refined oil; and that this principle applied to educational work for schools, farming, sanitation, etc., all of which in a democracy are dependent on educating the people. His penetrating mind taught him and

his corps of able advisers that the best, quickest, and most efficient means of educating people along any line was by means of a practical demonstration.

In aiding county educational work in the South, either through the General Education Board or the Southern Education Board, he spent money to secure the establishment here and there in this and other States of special tax schools as demonstrations. In these demonstration schools the people saw increased facilities, longer terms, better teachers and modern schoolhouses replace what they regarded as all they could afford. As a result, in this State there have been voted by the people, in spite of their usual aversion to increasing taxes, a special tax for schools in 1275 districts within the past twelve years. Having increased the school funds of the State in this way more than $1,228,886, an amount more than one-third as large as the entire school fund of the State, he is now directing his attention to the accomplishment of other definite things in educational work, which we shall not here discuss more than to say that all his representatives are employed for their entire time.

What has he done for agriculture? Did he diffuse his assistance to all crops, or for a definite demonstration? You know the answer. Through the General Education Board he put up the money for the boys' corn clubs, a crop which can be made in every county in the South. Why did he not take wheat, cotton or tobacco? One crop only was needed and corn is a necessity and grows everywhere. The result has been, as you know, that the yield has increased by leaps and bounds until now 100 bushels of corn are grown to the acre by mere boys, a feat undreamed of ten years ago.

The money for the girls' tomato clubs is put up by Rockefeller. Why did he take tomatoes? Because it is a crop which grows without fail every season in every Southern State, and

affords the opportunity for the single demonstration, which is sufficient. The canning of other vegetables or the fruits will be taken care of by the people as soon as the care of one definite product is mastered. Another aid to the farmers he supports is suggested by the name; the Farm Demonstration work. In this the farmer who desires it is instructed in the cultivation, not of the entire farm, but of a definite plot, using new and effective methods. This demonstration is sufficient. The remainder of the farm does not suffer long. The results have been that since this work began the yield per acre of all the crops has been increased from two to tenfold.

Those of you familiar with the campaign of tick eradication know that its splendid success has been dependent on the demonstrations made in small areas, usually the county. Similarly $5,000 spent in making a demonstration of two or three miles of good road does more to secure a bond issue of $250,000 for good roads by a county than would four times the amount spent in a haphazard manner on 100 miles of road. The demonstration which is practical and gives definite measurable results in the brief time the average man is willing to wait is the key to educational work.

Having seen this principle repeatedly found true in the educational work he had supported, what might be expected of Mr. Rockefeller when he concluded to lend support to health work which we all acknowledge is based on educating the people? His first notable health work was in the establishment of the Rockefeller Institute for Medical Research. What has been done there under the direction of Flexner is well known to you all. His next aid to health work was of a more practical nature so far as your Health Officers are concerned. He set about to select a disease which afforded the best opportunity for the eternal demonstration. Look through the list of diseases found in the State or South for example. What is available for the purpose? Diphtheria responds splendidly

to modern treatment, but is epidemic and requires immediate action. A few men in a large territory like a State could not meet the emergency of an epidemic, and once the epidemic was over, months might elapse before they could work again. Malaria is preventable and curable and would afford a splendid disease for demonstration purposes, but it is prevalent only at certain seasons of the year and in certain sections. Typhoid fever has no specific curative remedy as has malaria or hookworm disease, and is not adapted to demonstrative purposes. It may be prevented, but the people often will not credit statements that it has been prevented. Tuberculosis is prevalent and so chronic that for twelve months of the year it may be found in every county in the State. Hence it would afford an excellent example for demonstrating health work if immediate and striking results could be obtained in the short time the restless American is willing to watch for them.

Hookworm disease has none of these disadvantages. It is the most prevalent disease we have and is found in every county of the State. Its chronic nature renders it available for demonstrative purposes every day of the year in every community of the State. It is the only one of the common diseases in the State which has a causative agent discernible to the naked eye. It is both preventable and curable by methods, the simplicity of which appeals to everyone. The results following treatment are so prompt and emphatic that they have been aptly compared with the miracles of the New Testament.

In 100 counties of the State physicians have already seen the happy response to treatment for hookworm disease. They were, however, hedged in by medical ethics so that their experience was not heralded to the community at large. Without these restrictions they could have increased the interest of the people generally in preventive medicine. In this particular

a whole time Health Officer would be free from such considerations. He would not be regarded as courting private practice when he went about teaching the people.

Since last July five whole time Health Officers have conducted in thirty-five counties, State and County Dispensaries for the free examination and treatment for hookworm disease. Forty thousand people have been treated in this way. In every nook and corner of these counties may be found walking and talking examples to enthusiastically and eternally demonstrate the wonderful transformation which can be brought about with a small sum of money. The amount of work done by each man devoting his entire time to it is demonstrated. In being paid a salary he is not seeking fees in competition to practicing physicians. He can therefore have the co-operation of the profession and not, as is often the case, its hostility. Sums of from $200 to upwards of $300 have been appropriated in twelve months by the Boards of County Commissioners of forty-one counties, a total of $9,150. Forty-one counties have paid for an average of six weeks' definite health work more money than is paid in salaries to the County Superintendents of Health in sixty-five to perhaps seventy-five of all the counties in the State. This demonstrates that county money for health work is available as soon as the taxpayers are convinced by demonstration that you have something for them worth the money. Money is not scarce for those propositions which insures handsome returns. Robeson county had the dispensary demonstration last July and August. It saw the results in six weeks of 2,000 people treated for hookworm disease. Now it has our Demonstrator as a whole time Health Officer, at a larger salary than the Commission was paying him. With the approval of the profession of the county he will continue for the greater part of the summer at the county's expense, to make demonstrations by curing hookworm disease.

Sampson county had this demonstration work at the same time. Its people there saw 2,300 people treated for hookworm disease. Dr. G. M. Cooper, County Superintendent of Health, has since written that, "The dispensaries for treating hookworm disease did incalculable good to our county from every standpoint. To the infected children the actual treatment given has been worth many times the cost; but I believe that even greater good has been accomplished in arousing the people to a sense of the need for better sanitation and hygiene in everyday matters. Not a single complaint, even among the most miserly, has been heard." Hear what Mr. C. D. Bradham, Chairman of Craven County Board of Commissioners, writes as a representative of the feeling of County Commissioners: "I will be glad to make a trip to ——— county at my own expense, and appear before their Board for the benefit which this entire section would derive from the service. We are just beginning to realize how much good it has done Craven county. No equal amount of money we have spent has meant more for the welfare of the county." Mr. Joe Brown, of Chadbourn, states that he has sold considerable lumber in his county for sanitary privies. A Goldsboro merchant said that the sale of strap hinges and screen wire for privies has been a boon to his business. Evidences that the demonstrations are educating the people come in from all sides.

These gentlemen who are to discuss this subject will, I feel sure, make clearer to you than I have been able to do, the invaluable impulse county health work is receiving from having a concrete demonstration in a practical and convincing manner with disease particularly suited to the purposes of demonstration. If they have not actually seen the dispensary work there are numerous Health Officers present who have actually seen the work in progress, and the results following it. I feel sure they, too would be glad to give you first hand information concerning the educational value of the dispensary.

In doing this demonstrative work with a disease, the Rockefeller Sanitary Commission is doing, I believe, for State and county health work, what corn clubs and farm demonstration work has done for agriculture, and what the General Education Board has done for school work, namely, giving definite demonstrations.

THE PRESIDENT, DR. McBRAYER, INTRODUCING HONORABLE J. Y. JOYNER.

Twelve years ago the people of North Carolina inaugurated one of their best loved sons as Governor. He was a man of the people. He was an honest man. He was a courageous man. He dared to do right. Where duty called he never faltered. He was a man with prophetic vision. He saw the future of our great State, provided we measured up to the responsibilities that were placed upon us, and grasped the opportunities that were within our reach. He was a great leader. He was called our "Educational Governor" because he planned the Constitutional Amendment requiring a certain amount of education as a necessary qualification to the exercise of our electoral franchise; and he led our people into its adoption, promising them at the same time that our public schools should be enlarged and lengthened so that every child of this State should have ample opportunity to provide himself with the required amount of education, and more. He saw, as no other man had seen at that time, that the great need of our State was better education of her children. Governor Aycock is dead. All honor to his memory and peace to his ashes. "He has ceased from his labors and his works do follow him."

The man who does the greatest good is not the man who can do the most detail work, but it is the man who can inspire others to do good work, and can give them an opportunity to do it. So in laying his plans to carry out his pledge to the people of North Carolina, Governor Aycock called to his side a man whom he knew to be equal to the task; a man whom he knew to be competent from every standpoint; the friend of his childhood, the friend of his boyhood, the friend of his mature manhood, and placed him in the position of State Superinten-

dent of Public Instruction. He has proved himself worthy of the trust reposed in him. He took up this work where our lamented Aycock laid it own. He has steered the Educational Ship of State over rough seas and dangerous shoals. He has led our people on, until they have become so imbued, so enthused with the spirit of education, that for more than three years the effulgent rays of each morning's sun have kissed the foundation for a new schoolhouse; and at the dying of each day, as the sun sinks into the golden west, he wafts adieu and Godspeed as the finishing touches are applied. And, be it said to the shame of our Commonwealth, he has refused offers of twice the amount he receives, that he might continue to lead the people of his State, his own people, into greater and yet greater things. The people, be it said to their credit, have continued him in office; and recently the Democratic hosts of North Carolina have again placed him before the people without a dissenting voice. But he is not simply the choice of the Democratic party in North Carolina; he is the choice of the people of North Carolina.

This great educator has not failed to discern that our children must have a sound body in order to have a sound mind; that in order to cultivate the mind it must be enthroned in a healthy body; he is therefore an evangel of public health along with public education. And when the history of our State for the last decade, and the next, shall have been written, his name will appear among the names of the greatest men, the greatest benefactors North Carolina has ever known. It gives me peculiar pleasure to present my friend, Dr. J. Y. Joyner, of North Carolina.

Hon. J. Y. Joyner then addressed the meeting. His remarks being extemporaneous, no copy was available for publication.

WHAT A COUNTY SUPERINTENDENT OF SCHOOLS CAN DO FOR PUBLIC HEALTH.

A. C. Reynolds, County Superintendent of Schools of Buncombe County.

The school authorities are mainly responsible for the intellectual development of the children of the State. But we are coming more and more into a realization of the fact that school men are responsible, in large measure, for the physical and moral development of the children also.

Our State Superintendent, with a broad view of his duty to our children, has wisely planned this work, so that it may be effectually carried out throughout our whole school system. His agents for doing this work are the County Superintendents. If they fail to perform faithfully their duty, his plans will not be executed, and the public will suffer from the neglect. No County Superintendent can do more for the public health of his county than to follow the directions of the State Superintendent till he has performed that duty; but after he has fully accomplished that work, he may then do much on his own initiative.

After the schools close, the schoolhouses should be well cleaned, thoroughly ventilated, and kept in sanitary condition during the vacation.

During the month preceding the opening of the schools, the County Superintendent of Schools should accompany the County Superintendent of Public Health to every schoolhouse in the county. There they should inspect the school building with its furniture, to ascertain whether it is clean, well lighted, and can be well ventilated. They should take note of the effect the school furniture may have on the health and development of the children. The water supply should be examined and directions given for putting it into healthful condition. Plans

should be made, not only for putting the school grounds in sanitary condition, but also for keeping them so during the entire term of the school.

The Superintendent of Health of Buncombe County did such work, as above described, last year. As a result of his work, the schools were better attended, because there was much less of preventable diseases in the county than had been during any one of the preceding six years.

The Superintendent of Health did the extra work without any increase in his salary.

He and the Superintendent of Schools are planning to travel over the entire county during the next month, in order to put every schoolhouse, every school lot, and every school water supply in proper condition for the opening of the schools.

Just as the State Superintendent must have the co-operation of his County Superintendents, so the County Superintendent must have the co-operation of his teachers.

At the teachers' meeting just preceding the opening of the schools, the Superintendent should see that the teachers are supplied with the Health Bulletins. They should be urged to study the bulletins and put their teaching into practice. Every teacher should also be impressed with her responsibility of caring for the health of the people of her community. In this way the superintendent may be able to send out into every part of the county health guardians.

The superintendent's work is only just begun when he has given this direction. It is his duty to see that the work assigned is done. He has an opportunity to do this while visiting the schools. When he goes to the school, he should have a carefully prepared list of the things to be observed, so that he may not overlook something of vital importance to the health of the school. He should ever be on the alert, in order to detect other troubles which are peculiar to certain localities. He should remain at the school long enough to give directions

for whatever improvements are necessary, and it may be well for him to return, in order to see whether his dirctions are being put into execution.

During his visit he has an opportunity to make a short health lecture, which may open the eyes of the boys and girls to their surroundings at home. They may be induced to keep out flies, and destroy their breeding places, move hog pens, care for closets, clean springs, care for milk, ventilate bedrooms, or do many other things of which they had not thought till it was suggested by the superintendent. He may also be able to induce the teacher to visit the homes in the district and there, by way of suggestion, aid the parents in keeping their premises in healthful condition.

All abnormal children may be discovered, and the County Superintendent of Health or the local physician may be called to give medical attention. The County Superintendent of Education has it in his power to carry out the directions of the State Superintendent in regard to public health. He may so co-operate with the County Superintendent of Health as to enable him to serve well all the people of the county. He may, through his teachers, so organize the work as to reach every home in the county.

Who can estimate the good that may be accomplished by one superintendent who rises to the full measure of his responsibility to public health?

OPPORTUNITIES FOR COUNTY HEALTH WORK.

G. FLOYD ROSS, M.D., COUNTY HEALTH OFFICER OF GUILFORD COUNTY.

I am particularly glad to have the privilege of being here this morning, and of giving to a small degree some of the opportunities as I see them for preventing disease among the rural people, and for bettering the health of the school child. People of authority are beginning to realize more and more that no matter how efficient a State or a City Health Department is, its usefulness is lessened tremendously by the inefficient work done in the rural districts. And it was to overcome this inefficiency in county work that made those men interest themselves in the recommendations which passed our last legislature and became law. You are all more or less familiar with this law, and so I will not go into its details except to say that it provided for a County Board of Health of five public men, and for a physician to give his whole time to the work as Superintendent of Health.

I would like to call your attention to the personnel of a County Board of Health.

(1) As Chairman of the Board is the Chairman of the County Commissioners, a man well acquainted with the county and its people, and a man knowing the needs of the people. This is an important place.

(2) Another member is the Superintendent of Education, a man coming in daily contact with the citizens of tomorrow, knowing their mental and physical conditions, knowing whether or not they are able to make the most of their school life, and in cases where there is backwardness helping to investigate the causes of such conditions, and doing all in his power to rectify these defects.

(3) Another member is the mayor of the county town, a man presumably influential, broad minded and public spirited,

a man looking beyond the confines of the corporate limits of his town to the surrounding country, and taking care of the overlapping affairs of both.

(4) The other two members of the Board are physicians, who supply the technical knowledge necessary for such a Board.

The mouthpiece and executive officer of this Board is the Superintendent of Health. The ideal man for the place, is one of ability both from a professional and executive point of view, well rounded and unselfish, a quick thinker, and of infinite patience for oftentimes complaints lodged with him and the numerous questions asked of him are tiresome to a large degree.

The duties of the Superintendent of Health, as laid down by the State, are but the foundation on which we should build a well developed, well systematized Board of Health.

These duties are as follows:

(1) To make medico-legal post-mortem examinations for the coroner.

(2) To make examinations of lunatics for commitment.

(3) To render professional services to the county institutions, and make monthly reports of these to the County Commissioners and to the Secretary of the State Board of Health.

(4) He shall have under his charge the abatement of nuisances, and under this head come a variegated assortment of items, such as the cleaning and oiling of ponds to prevent the breeding of mosquitoes, the draining and ditching of low places for the same reason, the removal of hog pens, the disposal of dead carcases, the stopping of garbage dumping along country roads, etc.

(5) He shall make during the summer months sanitary inspection of all school buildings and grounds in the county, and give written permission for these buildings and grounds to be used for school purposes.

(6) He shall examine all school children upon request, who have been previously examined by the teacher, and shall report his findings to the teachers and parents.

(7) He shall work with the Superintendent of Education and with the teachers to the end that school children may be better informed on matters of health and on methods of preventing disease.

(8) He shall endeavor to educate the people of the county by papers, addresses, and exhibits, to set a higher standard of health for themselves and their children.

(9) Added to these are some regulations which should be made by the County Board of Health—such as:

a. The reporting of all births and deaths within the county.
b. The immediate reporting upon diagnosis of all the infectious diseases.
c. The registration of all midwives.
d. The disinfection of houses following cases of tuberculosis.

Very little need be said regarding the examination of lunatics for commitment, or of post-mortem examinations, but good work may be done at the county institutions, the jail, the convict camps, the workhouse, and the county home. All these places need general sanitary supervision, all need an occasional disinfection, and with the inmates of the camp and workhouse—mostly young men and women—there is opportunity for good work. They should be made to live while there under strict rules regarding health and sanitation, and sometimes while talking with them I have learned that they have keen appreciation for these regulations.

I consider that there are many opportunities for good work in the sanitary inspection of school buildings and grounds. Only those who have done this inspection can realize under what difficulties many children go to school. Oftentimes the

drinking water has to be carried a long way, and consequently is never good, and ventilation cannot be had without exposing the child to direct winds.

This inspection has two divisions: (1) of the grounds; (2) of the houses, the inspection of the grounds for their general cleanliness, and of the closets, inspection of the wells, and examinations of the water supply. Every school should have at least one good well, tiled from the bottom up with cemented joints, a well-fitting watertight top, and a pump instead of the old fashioned open-topped bucket, and where the bucket is handled by many hands of varying degrees of cleanliness, or rather uncleanliness, and then washed off in the well.

Then every school should have good sanitary closets not too far from the building, but in convenient secluded places. This is important, as those of us realize, who have practiced to any extent among children, for we know that they will often put off answering the physiological calls of nature from feelings of timidity, or because the closets are too inaccessible, or are lacking altogether.

Within the school building we should notice the size of the room, whether or not it is sufficient for the number of pupils, the number of desks in each room, method of ventilation, the lighting of the room, and the mode of heating.

In 79 schools examined last July, I found:

1 with sanitary closet.
31 with proper closets, and
47 with no closets.
23 of the schools had wells, and
56 had no water supply.

During the last year many new wells have been dug for the schools, and sanitary closets are now being put on every school ground.

(5) A very important part of the Superintendent's work, and one in which there are great possibilities, is that of examination of school children. They should be examined for defective hearing, defective eyesight, defective teeth, for enlarged tonsils, and adenoids, and for hookworm disease. 98% of all children I examined have tonsils and adenoids so enlarged as to deprive them of a good deal of air which they should be getting. Many of them have impaired eyesight and hearing, because of the throat condition. 12% of them have hookworm disease; several cases of pulmonary tuberculosis were found, and one case of hipjoint disease. Nearly all of these children were undersize and underweight, pale, and unable to do good school work.

The great trouble in this work is in getting these children treated, (1) because many of them have no acute pain to attract attention; (2) because many parents in the rural sections have not had the experience with operations as have had many people in the towns, and therefore will not, for a long time, consider the thought of having the adenoids and tonsils removed; and (3) because these children are scattered over a large territory, personal visits to the parents by the Superintendent are out of the question. However, I have had good results by enlisting the teachers' services, and by getting them to visit parents, explain matters to them, and to urge treatment.

One teacher working in this way was able to get 11 hookworm cases treated, and three operations done for adenoids and tonsils in one week.

I have neglected to say that upon examination each child should be given a card to his parents telling them of the defect found and urging treatment. After a reasonable length of time has passed, and after the teachers have made their visits and children are still untreated, letters should be sent the parents calling to their attention again the defects found. From time

to time, too, literature on adenoids and tonsilitis or hookworm disease, as the case may be, should be sent them, going on the principle that "a constant dropping will wear away the stone," and with the parents the "stone" is most often prejudice.

Another important part of the Superintendent's work is that of education of the people. This is a work of great opportunities, and can be carried on through the newspapers, through private bulletins, or by talks at various places throughout the county. As an example: Since last August I have made forty or more talks in different schoolhouses, and in this way reached over four thousand people. I illustrated these talks with stereopticon pictures, many of them of local people, suffering with smallpox for instance, or pictures of some school children before operation for adenoids and tonsils, and of the same children three or six months after the operation, showing the improvement in their physical condition. After the lecture opportunity should always be given for those present to ask questions, and in this way you may see just how interested they are.

The greatest opportunity, however, to teach the people, is through a bulletin issued by the County Board of Health, paid for by the Board or by private individuals, and sent free of charge to every house in the county. The subject matter of these bulletins should be written so as to be easily understood by all, and should deal with local questions, and local diseases, their cause and prevention, as much as possible.

Other opportunities for work come through the close association of the departments of Health and Education. Approximately one-third of the Superintendent's time is taken up with the schools and school children, and it is very important to get the teachers enlisted in this work. Many County Boards of Education now require their teachers to read and pass examinations on Ritchie's Primer of Sanitation, and consequently they have a working knowledge of the cause of

enlarged tonsils and adenoids, and of their evil effects; of hookworm disease, and the methods of keeping infections out of the schools.

The Superintendent should meet with the teachers in their meetings and take up with them at various times different phases of the health and hygiene question, and the teachers should be present when the children are examined in order to see the whys and wherefores of the defects. My experience showed me last year that the teachers were not only greatly interested in the work, but that they were willing to do their part for bettering the health of their pupils.

In doing any kind of health work it is absolutely essential to have a bird'seye view of the whole field, and in order to get this bird'seye view certain statistics are necessary. The Guilford County Board of Health has required since July 1, 1911, that all births and deaths occurring in the county be reported to the Superintendent by the physicians and midwives; (2) that infectious diseases such as smallpox, typhoid fever, scarlet fever, measles, whooping cough be reported immediately upon diagnosis, or even suspected diagnosis; (3) that midwives must register names and addresses at the office of the Superintendent, and receive a set of instructions from him. This registering of midwives is important because, as we all know, there are many women, of varying degrees of capability, who are doing this work. We hope by this means to put a check upon many unscrupulous and ignorant women, and thereby save the lives of women and babies, and prevent cases of blindness that are due to carelessness.

Great opportunities for preventing disease lie in the close supervision of the infections. It is a well known fact that measles and whooping cough with their common complication—pneumonia—kill more children than all the other diseases that children are heir to. The idea that all children have to have measles, mumps and whooping cough, is a false one, and

should be done away with. This is one item in the education of the people and no one any more than Superintendents of Health, followed by physicians, should do this educating. Rigid quarantining of these diseases as they appear, and instructions to fathers and mothers with regard to preventing their spread to other children of the family, will go a long way toward giving parents the right idea regarding them and toward wiping these infections from the list of common diseases.

In the close supervision of typhoid fever, good work can be done. When each case is reported, the Superintendent should go to the home, investigate the general sanitary condition, the water and milk supplies, stop the use of whichever is at fault, and instruct the family as to the method of keeping the other members from contracting the disease.

I have had the heartiest co-operation from the families I have visited with one or two exceptions, and this co-operation I am sure has prevented many cases of typhoid.

A Superintendent's work, however, is not done with these visits. He should, the following year, before the time when typhoid is prevalent, write or visit each family where there had been a case the year before, urge them to treat the well if it had been at fault, or to do whatever is necessary to prevent another outbreak of fever in the family. From time to time literature on various phases of typhoid should be sent the family. I am sorry that we do not require the reporting of cases of consumption, but our Board of Health does require me to make a thorough disinfection of a house where there has been a case. If these cases were only reported then the families could be visited, suggestions made to keep the disease from spreading to other members, and from time to time literature could be sent them bearing on the cause, the prevention, or the importance of early and proper treatment.

I have tried to tell briefly in the preceding pages, wherein I see opportunities for good county health work, but I realize that this work as yet is in its infancy. It is something entirely new, and there is no system so far as I can find out, that will fit it, and we have to work out our own salvation, yet we all acknowledge that this work must be done. We know, as I said in the beginning, that the weakest part of all public health work is that of the county. Yet it is hard to convince a Board of County Commissioners that they should set aside each year enough money to employ a good man to give his whole time to it, and enough to properly run his office. They can't see the results as they see a mile or two of macadam, and so are liable to think that they are not getting their money's worth. But if we had a State law requiring the registration of all deaths, they would be compelled to have a man to do this work, and then after 3 or 4 years he could prove to them by figures that the county's death rate was lowered, and that the economic value of the lives saved and illness prevented, was much more to the county than his salary, and the cost of his department. Until the State requires the registration of vital statistics, the county public health work will be hampered, and the efficiency of the health officers lessened, and with these inefficient results from the counties, the State Health Department can never be what it ought to be.

OTHER ADDRESSES.

Items 12, 18 and 19, of the program were disposed of in order of their appearance on the program.

Item 12, an address by Dr. J. Howell Way, President of the State Board of Health, on "The Whole Time County Health Officer," was delivered without manuscript and Dr. Way informs us that it would be impossible for him, at this time, to put in writing just what he said on this important subject. We regret this, because the speaker certainly treated "The Whole Time County Health Officer" in a clear and forcible way.

Item 18, an address by Hon. R. R. Williams, of Buncombe County, we have also been unable to obtain. Mr. Williams' address created probably greater interest than any other address before the Health Officers' Association, and for that reason we should be very glad, indeed, if it were possible to include what he said in the transactions of this Association.

Item 19, an address by Dr. T. M. Jordan, of Raleigh, on "Methods for Securing Co-operation of the Public in Health Work," has not been sent in after several requests.—EDITOR.

Alphabetical List of Members of the Medical Society with County.

Name	*County*
Abel, J. F.	Haywood
Abernathy, H. N.	Lincoln
Abernathy, M. B.	Rockingham
Abernethy, C. O.	Wake
Abernethy, J. S.	Mecklenburg
Absher, D. C.	Surry
Achorn, J. Warren	Lee
Adams, C. A.	Durham
Adams, C. E.	Gaston
Adams, D. C.	Vance
Adams, M. R.,	Iredell-Alexander
Adams, N. B.	Cherokee
Akerman, Josh	New Hanover
Alexander, Annie L.	Mecklenburg
Alexander, J. R.	Mecklenburg
Alford, A. E. B.	Guilford
Allen, B. G.	Vance
Allen, Joseph A.	Stanly
Allen, R. L.	Haywood
Allen, Wm.	Mecklenburg
Allhands, J. M.	Rutherford
Allred, E. W.	Surry
Ambler, Chase P.	Buncombe
Anders, McT. G.	Gaston
Anderson, Albert	Wake
Anderson, J. G.	Buncombe
Anderson, J. N.	Stanly
Anderson, Paul V.	Burke
Anderson, Thos. E.,	Iredell-Alexander
Anderson, W. H.	Wilson
Anderson, W. S.	Wilson
Andrews, N. H.	Robeson
Anthony, J. E.	Gaston
Archer, I. J.	Buncombe
Archey, L. M.	Cabarrus
Armfield, R.	Union
Armore, Geo. E.	Pamlico
Arnold, L. J.	Harnett
Asbury, F. E.	Randolph
Ashby, Thos. B.	Surry
Ashcraft, J. F.	Union
Ashworth, B. L.	McDowell
Ashworth, W. C.	Guilford
Austin, F. D.	Mecklenburg
Austin, J. A.	Mecklenburg
Averitt, K. G.	Cumberland
Aydlette, H. T.,	Pasquotank-Camden-Dare
Aydlette, J. P.	Cleveland
Baggett, L.	Columbus
Bahnson, H. T.	Forsyth
Baird, C. A.	Surry
Baker, J. M.	Edgecombe
Ballard, A. M.	Buncombe
Banner, C. W.	Guilford
Barbee, G. S.	Wake
Barefoot, M. L.	Harnett
Barker, L. S.	Durham
Barnes, B. F.	Wilson
Barron, A. A.	Mecklenburg
Bass, H. H.	Vance
Bass, S. P.	Edgecombe
Battle, Geo. C.	Moore-Lee
Battle, Geo. C.	Nash
Battle, J. T. J.	Guilford
Battle, K. P., Jr.	Wake
Battle, S. W.	Buncombe
Baynes, R. S.	Person
Beall, L. G.	Guilford
Beall, W. P.	Guilford
Beard, G. H.	Madison
Bellamy, W. J. H.	New Hanover
Bell, G. M.	Wake
Best, Henry	Wilson
Biggs, H. M.	Rutherford
Billing, E. T.	Rockingham
Bitting, N. P.	Durham
Bizzelle, T. M.	Wayne
Black, J. C.	Cabarrus
Blair, A. McNeil	Moore
Blair, J. M.	Union
Blair, M. P.	Union
Blake, J. F.	Columbus
Blount, J. G.	Beaufort
Bobbitt, E. H.	Franklin
Boddie, N. P.	Durham
Bolles, C. P.	New Hanover
Bonner, K. P. B.	Carteret
Boone, W. H.	Durham
Booth, S. D.	Granville
Booth, T. L.	Granville

Name	*County*
Bostic, W. C.	Rutherford
Bowling, E. H.	Durham
Bowman, H. F.	Montgomery
Bowman, H. P.	Guilford
Boyles, A. C.	Durham
Boyles, J. H.	Guilford
Bradford, R. H.	Pender
Bradsher, W. A.	Person
Brawley, R. V.	Rowan
Brenizer, A. T.	Mecklenburg
Briggs, H. H.	Buncombe
Brooks, B. W.	Durham
Brooks, Z. T.	Guilford
Brookshire, H. G.	Buncombe
Brothers, J. E.	Wayne
Brown, Geo. A.	Rowan
Brown, G. W.	Cumberland
Brown, J. P.	Robeson
Brown, J. S.	Henderson-Polk
Brownson, W. C.	Buncombe
Bryan, L. O.	Onslow
Buchanan, C. F.	Mitchell
Buchanan, E. J.	Davidson
Buckner, J. M.	Buncombe
Buckner, R. G.	Buncombe
Buffalo, J. S.	Wake
Bullock, D. W.	New Hanover
Bullock, E. S.	New Hanover
Bullock, T. C.	Cumberland
Burbank, T. S.	New Hanover
Burleyson, L. N.	Cabarrus
Burnett, J. H.	Anson
Burrus, John T.	Guilford
Burt, B. W.	Wake
Burt, S. P.	Franklin
Busby, J. G.	Rowan
Byerly, A. B.	Davie
Bynum, John	Forsyth
Bynum, Wade H.	Forsyth
Caldwell, D. G.	Cabarrus
Caldwell, J. A.	Rowan
Caldwell, Morris M.,	New Hanover
Calloway, A. W.	Buncombe
Campbell, A. C.	Wake
Campbell, J. I.	Stanly
Cannady, S. H.	Granville
Canthen, R. S.	Mecklenburg
Carlton, Arch.	Durham
Carrett, F. J.	Rockingham
Carroll, E. D.	Dixon-Wake
Carroll, J. L.	Buncombe
Carroll, R. S.	Buncombe
Carstapher, W. T.	Wake
Carter, G. H.	Caldwell
Carter, H. W.	Beaufort
Cason, H. M. S.	Perquimans
Caton, Geo. A.	Craven
Cauble, H. H.	Cabarrus
Caviness, G. M.	Wake
Champion, C. O.	Cleveland
Chaney, T. M.	McDowell
Chapin, W. B.	Vance
Cheatham, Arch.	Durham
Cheeseborough, Thos. P.	Buncombe
Choate, G. W.	Rowan
Clark, Geo. L.	Bladen
Clemenger, F. J.	Buncombe
Clifford, J. S.	Mecklenburg
Clingman, J. J.	Yadkin
Clodfelter, Chas. M.	Davidson
Clontz, W. J.	Buncombe
Clutze, E. E.	Iredell-Alexander
Coble, W. A.	Guilford
Cocke, Jere. E.	Buncombe
Cohn, B. W.,	Pasquotank-Camden-Dare
Colbey, C. D.	Buncombe
Coleman, T. S.	Johnston
Cole, W. I.	Guilford
Cooper, G. M.	Sampson
Coppedge, N. P.	Richmond
Corpening, Oscar J.	Caldwell
Costello, M. J.	Buncombe
Costner, G. H.	Lincoln
Costner, T. F.	Mecklenburg
Cotton, Clyde E.	Buncombe
Council, J.	Rowan
Covington, J. M., Jr.	Anson
Cox, B. F.	Stanly
Cox, E. L.	Onslow
Cox, T. A.	Perquimans
Craig, S. D.	Forsyth
Cranmer, J. B.	New Hanover
Cramer, J. B.	New Hanover
Craven, W. W.	Mecklenburg
Crawford, J. F.	Henderson-Polk
Creddle, E. S.	Beaufort
Crocker, S. H.	Wilson
Croom, A. B.	Robeson
Croom, J. D.	Robeson
Crowell, A. J.	Mecklenburg
Crowell, L. A.	Lincoln
Crowell, M. M.	Columbus
Crumpler, Paul	Sampson

Name	*County*
Crump, W. L.	Rowan
Currie, D. S.	Robeson
Currie, E. W.	Rowan
Cuthell, J. E.	Davidson
Daligney, Chas.	Montgomery
Dalton, D. N.	Forsyth
Dalton, W. N.	Forsyth
Daniel, N. C.	Granville
Daniels, Oscar C.	Pamlico
Davidson, J. E. S.	Mecklenburg
Davis, A. P.	Forsyth
Davis, George	Carteret
Davis, J. C.	Buncombe
Davis, W. W.	Gaston
DeArmand, J. M.	Mecklenburg
Dees, R. E.	Guilford
Dees, R. O.	Guilford
Dees, S. A.	Pamlico
Denning, Q. L.	Harnett
Denny, W. W.	Lenoir
Dickinson, E. T.	Wilson
Dick, J. V.	Guilford
Disosway, A. W.	Washington
Dixon, Guy E.	Henderson-Polk
Dodson, H. H.	Guilford
Dosher, J. Arthur	Brunswick
Dowd, J. A.	Montgomery
Dowdy, J. E.	Forsyth
Drafts, A. B.	Henderson-Polk
Dudson, A. P.	Cumberland
Duffy, Chas.	Craven
Duffy, Frank	Craven
Duffy, R. N.	Craven
Dugeind, J.	Craven
Duncan, C. L.	Carteret
Duncan, G. F.	Guilford
Duncan, J. E.	Wilkes
Dunlap, J. M.	Anson
Dunlap, L. V.	Stanly
Dunn, Wm. L.	Buncombe
Eagles, C. S.	Wilson
Easly, P. S.	Davidson
Eason, Oscar	Johnson
Eckel, O. F.	Buncombe
Eddleman, H. M.	Gaston
Edwards, B. O.	Rowan
Edwards, G. C.	Greene
Egerton, J. L.	Henderson-Polk
Elias, Lewis W.	Buncombe
Ellington, J. H.	Stokes
Ellington, S. B.	Rockingham
Engle, W. R.	Mecklenburg
English, E. S.	Transylvania
English, I. L.	Madison
Eubanks, J. B.	Union
Evans, S. B.	Bladen
Evans, Wm.	Robeson
Everett, A. C.	Richmond
Everington, Geo. D.	Scotland
Exum, W. P., Jr.	Wayne
Fail, M. A.	Cabarrus
Faison, I. W., Hon.	Mecklenburg
Faison, W. W.	Wayne
Faison, Yates	Mecklenburg
Fassett, B. W.	Durham
Faucett, T. S.	Alamance
Fearing, I.,	Pasquotank-Camden-Dare
Fearing, Zenas,	Pasquotank-Camden-Dare
Fearington, J. P.	Forsyth
Felts, R. L.	Durham
Fenner, E. F.	Vance
Ferbee, E. B.	Wake
Ferrell, Jno. A.	Wake
Finney, J. R.	Yadkin
Fitzgerald, I. Y.	Union
Fleming, M. I.	Martin
Fletcher, M. H.	Buncombe
Flippin, J. M.	Surry
Flippin, R. E. L.	Surry
Flippin, S. T.	Surry
Flowers, B. G.	Caldwell
Flowers, C. A.,	Washington-Tyrrell
Flowers, G. B.	Caldwell
Floyad, J. W.	Columbus
Floyad, L. D.	Columbus
Floyd, A. G.	Columbus
Floyd, R. P.	Franklin
Flynt, S. S.	Forsyth
Foil, M. A.	Cabarrus
Fortune, A. F.	Guilford
Fox, M. F.	Guilford
Fox, T. I.	Randolph
Frazier, H. T.	Buncombe
Freeman, H. F.	Wilson
Frisbee, T. J.	Madison
Frizzelle, M. T.	Pitt
Galloway, W. C.	New Hanover
Gamble, J. R.	Lincoln
Gardner, G. D.	Buncombe
Garren, R. H.	Gaston
Garrett, F. J.	Richmond
Garrington, Cecil	Currituck
Garrison, D. A.	Gaston
Gayle, Edward M.	Burke
Gentry, G. W.	Person

Name	*County*
George, D. S.	Carteret
Gibbon, Robt. L.	Mecklenburg
Gibbs, N. M.	Craven
Gibson, J. S.	Scotland
Gibson, M. R.	Robeson
Gill, J. N.	Buncombe
Gill, R. J.	Vance
Gilmer, B. H.,	Washington-Tyrrell
Gilmer, C. S.	Guilford
Gilmore, W. D.,	Iredell-Alexander
Gilreath, F. H.	Wilkes
Glenn, E. B.	Buncombe
Glenn, H. F.	Gaston
Glenn, L. N.	Gaston
Gold, Chas.	Rutherford
Goley, Wm. R.	Alamance
Goodman, A. B.	Caldwell
Goodman, E. G.	Brunswick
Goodwin, A. W.	Wake
Gouger, G. J.	Cabarrus
Gove, Anna M.	Guilford
Grady, Earl	Henderson-Polk
Grady, J. C.	Johnston
Graham, Geo. A.	Cumberland
Graham, Joseph	Durham
Graham, W. A.	Mecklenburg
Gray, E. P.	Forsyth
Grayson, C. S.	Guilford
Greenwood, B. W.	Haywood
Greeg, W. T.	Cleveland
Green, J. B.	Buncombe
Green, W. W.	Edgecombe
Greenwood, S. E.,	Henderson-Polk
Grier, S. A.	Cabarrus
Griffin, J. A.	Johnston
Griffith, F. W.	Buncombe
Guin, T. L.	Wayne
Gurard, A. R.	Henderson-Polk
Halford, J. W.	Harnett
Hall, E. A.	Iredell-Alexander
Hall, Jas. K.	Burke
Hall, J. Clegg	Stanly
Halsey, B. F.,	Washington-Tyrrell
Hamell, Wm. L.	Richmond
Hammock, J. C.	Forsyth
Hamrick, T. G.	Cleveland
Harbeed, E. V.	Buncombe
Hardee, P. R.	Granville
Hard, J. E.	Anson
Harding, T. R.	Yadkin
Hardison, W. H.,	Washington-Tyrrell
Hargrove, R. H.	Martin
Hargrove, W. F.	Lenoir
Harper, Chas. T.	New Hanover
Harper, James H.	Greene
Harrell, S. N.	Edgecombe
Harris, A. G.	Hyde
Harris, A. H.	New Hanover
Harris, D. W.	Robeson
Harris, E. B.	Rutherford
Harris, F. R.	Vance
Harris, L. A.	Buncombe
Harris, J. A.	Buncombe
Harris, J. H.	Franklin
Harrison, Edmund	Guilford
Harrison, J. S.	Wilson
Hartsell, F. E.	Stanly
Hassell, J. L.,	Washington-Tyrrell
Hathaway, B. W.	Chowan
Hathcock, T. A.	Stanly
Hawes, J. S.	Craven
Hawley, F. O.	Mecklenburg
Hayden, C. P.	Wake
Hayes, R. R.	Cumberland
Haywood, F. J.	Wake
Haywood, H. B.	Wake
Haywood, Hubert	Wake
Headen, W. E.	Carteret
Heilig, H. G.	Rowan
Henderson, R. B.	Franklin
Henderson, S. M.	Mecklenburg
Hennessee, E. A.	Burke
Herbert, F. L.	Cherokee
Herbert, W. P.	Buncombe
Herring, B. S.	Wilson
Hester, J. R.	Wake
Hiatt, H. B.	Randolph
Hicks, C. S.	Durham
Hicks, I. F.	Harnett
Hicks, Romeo	Rutherford
Hicks, W. N.	Durham
Highsmith, J. F.	Cumberland
Highsmith, Seavy	Cumberland
Highway, S. C.	Cherokee
Hill, C. D.	Durham
Hill, D. J.	Davidson
Hill, J. N.	Cherokee
Hill, Lee W.	Davidson
Hill, L. H.	Stokes
Hill, W. I.	Stanly
Hilliard, W. D.	Buncombe

Name	*County*
Hilton, J. J.	Guilford
Hobgood, J. E.	Rutherford
Hocutt, B. A.	Johnston
Hodgin, H. H.	Robeson
Hoggard, T. J.	Pender
Hoggard, W. A.,	Pasquotank-Camden-Dare
Holcomb, C. M.	Yadkin
Hollingsworth, Ed. M.	Surry
Hollingsworth, R. E.	Surry
Holloway, O. W.	Granville
Holloway, R. L.	Durham
Holmes, F. H.	Sampson
Holt, I. J.	Warren
Holt, W. P.	Harnett
Holt, W. T.	Guilford
Hooks, Thel	Johnston
Hooper, J. O.	Henderson-Polk
Hoover, C. H.	Lincoln
Horton, W. C.	Wake
Horton, W. P.	Wilkes
Houch, Albert	Burke
Houser, E. A.	Cleveland
Hovis, Leighton	Mecklenburg
Howell, L. B.	Rutherford
Howe, W. B. W.	Henderson-Polk
Hoyt, A. C.	Beaufort
Hubbard, C. C.	Randolph
Hudson, W. L.	Harnett
Hughes, Geo. R.	Onslow
Hunnicutt, W. J.	Buncombe
Hunt, C. W.	Transylvania
Hunt, Dr.	Cleveland
Hunter, H. H.	Beaufort
Hunter, J. V.	Randolph
Hunter, L. W.	Mecklenburg
Hunter, M. C.	Gaston
Hunter, N. C.	Richmond
Hunter, W. L.	Mecklenburg
Huston, M. C.	Wake
Hutcheson, S. S.	Cumberland
Hutchins, E. M.	Wilkes
Hyatt, A. L.	Onslow
Hyatt, H. B.	Lee
Hyatt, H. O.	Onslow
Ingram, C. B.	Montgomery
Irwin, Jno. R.	Mecklenburg
Ivey, W. P.	Caldwell
Jackson, C. C.	Beaufort
James, W. D.	Scotland
Jarboe, Parran	Guilford
Jenkins, C. L.	Wake
Jenkins, J. H.	Gaston
Jewett, R. D.	Forsyth
Jnat, Francis	Cumberland
John, Peter	Scotland
Johnson, B. C.	Franklin
Johnson, Floyd	Columbus
Johnson, Lee	Henderson-Polk
Johnson, N. M.	Durham
Johnson, R. W.	Wake
Johnson, T.	Robeson
Johnson, W. A.	Rockingham
Johnson, W. M.	Forsyth
Jonas, J. F.	McDowell
Jones, A. A.	Stokes
Jones, E. H.	Hyde
Jones, R. DuVal	Craven
Jones, W. M., Jr.	Guilford
Jordan, A. C.	Durham
Jordan, C. S.	Buncombe
Jordan, G. E.	Guilford
Jordan, T. M.	Wake
Jordan, Wm. S.	Cumberland
Judd, E. C.	Wake
Judd, J. M.	Wake
Julian, Chas. A.	Davidson
Justice, A. B.	McDowell
Justice, J. F.	Forsyth
Kapp, H. H.	Forsyth
Kellum, W. D.	Beaufort
Kennedy, J. B.	Wayne
Kent, A. A.	Caldwell
Kerr, J. D. J.	Sampson
Killian, R. B.	Lincoln
King, M. M.	Transylvania
King, M. N.	Durham
King, Parks M.	Mecklenburg
King, R. M.	Cabarrus
Kirby, Guy S.	McDowell
Kirkpatrick, L. R.	Robeson
Kirk, Wm. R.	Henderson-Polk
Kiser, W. C.	Lincoln
Klutz, E. E.	Iredell-Alexander
Knight, J. B. H.	Martin
Knight, W. P.	Guilford
Knox, A. W.	Wake
Knox, John, Jr.	Robeson
Konnegay, L. W.	Wayne
Koonce, S. E.	New Hanover
Lafferty, J. S.	Cabarrus
Lafferty, R. H.	Mecklenburg
Lamm, I. W.	Wilson
Lancaster, B. B.	Rutherford
Lattimore, E. B.	Cleveland

Name	County
Laton, J. F.	Stanly
Laughinghouse, Chas. O'H.	Pitt
Lawrence, C. S.	Forsyth
Lehallest, P. V.	Forsyth
Leak, J. J.	Stokes
Ledbetter, J. M.	Richmond
Lee, L. V.	Cleveland
Lee, R. C.	Wayne
Lee, S. P. J.	Harnett
Leinbach, R. F.	Mecklenburg
Lewis, R. H.	Wake
Liles, Nelson P.	Bladen
Lilly, J. M.	Cumberland
Linville, A. Y.	Forsyth
Linville, W. C.	Forsyth
Lion, A. E.	Durham
Lockett, E. A.	Forsyth
Long, B. L.	Martin
Long, E. F.	Davidson
Long, E. M.	Martin
Long, Geo. W.	Alamance
Long, John W.	Guilford
Long, V. M.	Forsyth
Long, W. T.	Person
Lott, H. S.	Forsyth
Love, B. E.	Persons
Lovelace, T. B.	Rutherford
Lumsden, W. J.,	Pasquotank-Camden-Dare
Lyday, E. A.	Transylvania
Lyday, W. M.	Henderson-Polk
Mack, F. L.	Davidson
Malloy, S. A.	Caswell
Malone, J. E.	Franklin
Maness, J. M.	Richmond
Manley, R. L.	Harnett
Manning, I. H.	Orange
Manning, J. M.	Durham
Mann, J. A.	Hyde
Mann, J. E.	Hyde
Mann, Stewart M.	Currituck
Mann, T. A.	Durham
Marriner, N. B.,	Washington-Tyrrell
Martin, J. F.	Davie
Martin, S. L.	Rockingham
Martin, W. C.	Davie
Matheson, J. P.	Mecklenburg
Matheson, R. C.	Rockingham
Matthew, J. H.	Lee
Matthew, M. L.	Lee
Matthews, J. M.	Cabarrus
Matthews, J. O.	Sampson
Maxwell, F. B.	Columbus
Mayberry, J. W.	Johnson
Maynard, J. D.	Currituck
Meadows, E. B.	Granville
Meadows, W. J.	Guilford
Mease, J. H.	Haywood
Meisenheimer, T. F.	Anson
Melvin, W. C.	Harnett
Mercer, W. P.	Edgecombe
Meriwether, F. T.	Buncombe
Meroney, B. B.	Cherokee
Merrimon, Louise A.	Buncombe
Merritt, J. H.	Person
Michals, A. F.	Person
Michals, C. F.	Person
Michaux, E. R.	Guilford
Miles, May S.	Guilford
Miller, R. W.	Wayne
Minor, C. L.	Buncombe
Misenheimer, C. A.,	Mecklenburg
Mitchell, W. F.	Cleveland
Mock, F. L.	Davidson
Mock, J. H.	Davidson
Moir, S. A.	Stokes
Monk, G. M.	Rowan
Monk, H. L.	Rowan
Monroe, John P.	Lee
Monroe, W. A.	Lee
Montford, W. J.	Onslow
Moore, C. E.	Guilford
Moore, C. E.	Wilson
Moore, D. G.	Cabarrus
Moore, E. G.	Wilson
Moore, F. T.	Harnett
Moore, Houston	New Hanover
Moore, J. C.	Caldwell
Moore, J. N.	Madison
Moore, K. C.	Wilson
Moore, L. G.	Wake
Moore, O.	Mecklenburg
Moore, T. V.	Columbus
Moore, W. B.	Stokes
Moore, W. H.	New Hanover
Moore, W. J.	Randolph
Moorefield, L. G.	Guilford
Morrill, D. S.	Pitt
Morris, E. R.	Buncombe
Morris, G.	Wayne
Morris, Henry	Rutherford
Morris, J. A.	Granville
Morrow, W. C.	Cherokee
Morse, L. B.	Henderson-Polk
Morse, L. B., Hon.	Polk

Name	*County*
Morton, N. D.	Vance
Moseley, C. W.	Guilford
Moser, W. D.	Alamance
Mucan, G. H.	Warren
Mucan, P. J.	Warren
Mudgitt, W. C.	Moore
Munns, L. A.	Johnston
Munroe, J. P.	Mecklenburg
Murphy, J. G.	New Hanover
Murphy, W. B.	Greene
Myers, J. Q.	Mecklenburg
Myers, R. W.	Randolph
McAllister, Wm.	Vance
McAnally, W. J.	Guilford
McBrayer, L. B.	Buncombe
McBrayer, T. E.	Cleveland
McBride, H. M.	Rockingham
McCain, H. W.	Guilford
McCain, W. R.	Union
McCampbell, Jno. M.	Burke
McColter, S. E.	Pamlico
McCombs, C. J.	Gaston
McConnell, J. W.	Mecklenburg
McCoy, J. M.	Gaston
McCracken, C. M.	Buncombe
McCracken, J. R.	Haywood
McCullers, J. J. L.	Wake
McCullers, W. L.	Stokes
McCullers, W. V.	Stokes
McDonald, A. A.	Moore-Lee
McDewitt, A. J.	Madison
McFayden, P. R.	Cabarrus
McGhee, J. W.	Rockingham
McGoughen, J. V.	Cumberland
McIntosh, D. M.	McDowell
McIver, E. M.	Lee
McIver, Lynn	Lee
McKaig, F. G.	Cherokee
McKay, J. F.	Harnett
McKee, Jas.	Wake
McKee, John	Wake
McKee, J. W., Jr.	Wake
McKethan, D. G.	Cumberland
McKethan, Jno. A.	Cumberland
McKenzie, W. W.	Rowan
McLaughlin, C. S.	Mecklenburg
McLaughlin, J. E.,	Iredell-Alexander
McLean, Allen	Scotland
McLean, J. W.	Harnett
McLean, Peter	Scotland
McLean, R. H.	Sampson
McLemore, G. A.	Johnston

Name	*County*
McLeod, A. H.	Moore
McLeod, Gilbert	Moore
McManaway, C. G.	Mecklenburg
McMillan, B. F.	Robeson
McMillan, J. H.	Perquimans
McMillan, J. L.	Robeson
McMillin, J. M.	Moore
McMillum, Roscoe	Robeson
McMullan, Oscar	Pasquotank-Camden-Dare
McNary, C. B.	Caldwell
McNeill, J. M.	Cumberland
McNeill, J. W.	Cumberland
McPhail, L. D.	Richmond
McPherson, Chas.	Alamance
McPherson, S. D.	Durham
Nalle, B. C.	Mecklenburg
Nance, Geo. B.	Union
Neal, John W.	Union
Nelson, R. J.	Martin
Newall, H. A.	Franklin
Nichols, A. F.	Person
Nichols, C. G.	Person
Nichols, R. E.	Durham
Nicholson, J. L.	Onslow
Nicholson, J. T.	Beaufort
Nicholson, P. A.	Beaufort
Nisbet, W. O.	Mecklenburg
Noble, R. J.	Johnston
Noble, R. P.	Johnston
Norman, G. W.	Guilford
Norris, Henry	Rutherford
Northington, J. M.	Columbus
Oates, Geo.	Cleveland
Olive, P. W.	Cumberland
Olive, W. W.	Durham
Orr, C. C.	Buncombe
Orr, C. V.	Cherokee
Orr, N. A.	Gaston
Orr, Peter B.	Buncombe
Paddison, J. R.	Guilford
Page, B. W.	Onslow
Palmer, B. H.	Cleveland
Palmer, R. W.	Lee
Paquin, Paul	Buncombe
Parker, G. E.	Johnston
Parker, J. Rainey	Wayne
Parrott, A. Dek.	Lenoir
Parrott, James M.	Lenoir
Parrott, W. T.	Lenoir
Passer, R. G.	Lee
Pate, G. M.	Robeson
Pate, J. F.	Robeson
Pate, W. T.	Scotland

Name	*County*
Patrick, G. R.	Gaston
Patrick, J. E.	Pitt
Patterson, C. A.	Mitchell
Patterson, J. A.	Cabarrus
Patterson, J. F.	Craven
Payne, R. L.	Union
Peck, E. J.	Madison
Peeler, C. N.	Mecklenburg
Peete, C. H.	Warren
Pemberton, W. D.	Cabarrus
Penny, J. A. J.	Wake
Pepper, J. K.	Davie
Perkins, D. R.	Union
Perkins, F. E.	Vance
Perry, E. M.	Franklin
Perry, M. P.	Warren
Person, E. C.	Wayne
Person, J. B.	Johnston
Peterson, C. A.	Watauga-Mitchell
Petrie, R. W.	Mecklenburg
Pfohl, S. F.	Forsyth
Pharr, T. F.	Cabarrus
Pharr, W. W.	Mecklenburg
Phifer, Ed. W.	Burke
Philips, M. D.	Stokes
Phillips, J. J.	Edgecombe
Pickett, J. A.	Alamance
Pierce, S. B.	Durham
Pittman, H. L.	Cumberland
Pollock, Raymond	Craven
Poole, C. M.	Rowan
Pope, H. L.	Robeson
Potter, W. T.	Beaufort
Powell, R. A.	Cumberland
Powers, J. B.	Wake
Powers, J. B., Jr.	Wake
Primrose, R. S.	Craven
Prince, D. M.	Scotland
Pritchard, A. T.	Buncombe
Pritchard, John L.	Bertie
Puett, Bessie V.	Gaston
Purefoy, Geo. W.	Buncombe
Query, P. S.	Mecklenburg
Quickel, T. C.	Gaston
Ramseur, G. A.	Rowan
Ramsey, J. F.	Mecklenburg
Rankin, P. R.	Montgomery
Rankin, W. S.	Wake
Ranson, J. L.	Mecklenburg
Ray, John	Rockingham
Ray, O. L.	Wake
Reaves, W. P.	Guilford
Redding, A. H.	Randolph

Name	*County*
Reece, J. M.	Surry
Reed, C. E.	Buncombe
Reed, Jno. F.	Reed
Reed, J. W.	Gaston
Reedy, Howard	Robeson
Reeves, A. F.	Buncombe
Register, E. C.	Mecklenburg
Reid, Geo. P.	Rutherford
Reid, R. M.	Gaston
Reid, W. K.	Mecklenburg
Reitzel, C. E.	Guilford
Reitzel, J. R.	Guilford
Reives, J. T.	Guilford
Reynolds, Carl V.	Buncombe
Reynolds, T. F.	Haywood
Rhem, J. F.	Craven
Rhine, J. F.	Craven
Rhodes, J. S.	Martin
Richardson, W. J.	Guilford
Rich, John C.	Haywood
Riddick, J. G.	Wake
Riddle, J. B.	Burke
Rigsbee, A. E.	Wake
Ringer, P. H.	Buncombe
Ring, J. W.	Surry
Roberson, Chas.	Guilford
Roberson, Troy	Durham
Roberts, Frank	Madison
Robinson, Frank	Gaston
Robison, Newton	Bladen
Rochell, J. W.	Davie
Rodman, John C.	Beaufort
Rodwell, J. W.	Davie
Rogers, J. R.	Wake
Rose, A. H.	Johnston
Rose, A. S.	Cumberland
Ross, C. E.	Burke
Ross, Geo. H.	Durham
Ross, G. F.	Guilford
Ross, O. B.	Mecklenburg
Ross, R. D.	Anson
Rowe, H. B.	Mecklenburg
Royal, B. F.	Carteret
Royall, M. A.	Yadkin
Royster, H. A.	Wake
Royster, S. S.	Cleveland
Royster, T. H.	Gaston
Royster, W. I.	Wake
Rucker, A. A.	Rutherford
Russell, E. R.	Buncombe
Russell, F. E.	New Hanover
Russell, J. M.	Haywood
Russell, S. L.	Yadkin

Name	*County*
Sain, J. W.	Lincoln
Saliba, M. M.	Wilson
Salley, E. M.	Henderson-Polk
Sampson, J. P.	Edgecombe
Sanderfood, J. F.	Granville
Saunders, J. H.	Martin
Sawyer, C. J.	Bertie
Sawyer, C. W.,	Pasquotank-Camden-Dare
Sawyer, W. W.,	Pasquotank-Camden-Dare
Schaub, O. P.	Person
Schonwald, J. T.	New Hanover
Schoonover, R. A.	Guilford
Schubert, S. H.	Robeson
Sevier, D. E.	Buncombe
Sevier, Jos. T.	Buncombe
Sexton, C. H.	Harnett
Shamberger, J. B.	Montgomery
Shaw, Wm. G.	Scotland
Shields, H. B.	Moore
Shoemaker, H.	Cleveland
Shore, C. A.	Wake
Shore, Thad W.	Yadkin
Sigman, F. G.	Rowan
Sikes, G. L.	Sampson
Sikes, G. T.	Granville
Simmons, John O.	Mecklenburg
Skinner, L. C.	Mecklenburg
Skinner, L. C.	Pitt
Slate, J. W.	Stokes
Sloan, Henry	Sampson
Sloan, J. M.	Gaston
Sloop, E. H.	Mitchell
Small, W. P.	Beaufort
Smith A. W.	Perquimans
Smith, F.	Harnett
Smith, J. B.	Surry
Smith, J. M.	Robeson
Smith, Owen	Buncombe
Smith, R. A.	Wayne
Smith, W. A.	Wilson
Smith, W. F.	Columbus
Smith, W. H.	Wayne
Smithwick, J. E.	Martin
Smoot, J. E.	Cabarrus
Smoot, M. L.	Rowan
Smott, J. B.	Rutherford
Snipes, E. P.	Lee
Sorrell, L. P.	Wake
Spainhour, E. H.	Forsyth
Speas, W. P.	Davie
Speight, J. W.	Washington-Tyrrell
Speight, R. H.	Edgecombe
Spencer, F. B.	Rowan
Spencer, W. O.	Forsyth
Spoon, O. A.	Guilford
Sprinkle, C. N.	Madison
Spruill, J. L.	Washington-Tyrrell
Squires, J. W.	Mecklenburg
Stack, R. E.	Mitchell
Stafford, W. G.	Alamance
Staley, S. W.	Beaufort
Stamps, Thomas	Robeson
Stanley, J. H.	Johnston
Stanton, D. A.	Guilford
State, W. C.	Stokes
Staton, L. L.	Edgecombe
Steele, W. C.	Wayne
Stevens, J. O.	Sampson
Stevens, M. L.	Buncombe
Stevens, Ralph S.	Wake
Stevens, S. A.	Union
Stewart, H. D.	Union
Stokes, J. E.	Rowan
Stone, Wm. M.	Surry
Stout, N. H.	Craven
Stovie, J. G.	Caldwell
Street, M. E.	Moore
Street, N. H.	Craven
Strickland, E. E.	Forsyth
Strickland, J. A.	Wake
Stringfield, Sam L.	Haywood
Stringfield, Thos.	Haywood
Strong, C. M.	Mecklenburg
Stroud, W. A.	Durham
Summerell, E. M.	Rowan
Summers, J. W.	Mecklenburg
Sumner, T. W.	Henderson-Polk
Surles, J. B.	Robeson
Sutten, S. W.	Onslow
Sutton, C. W.,	Pasquotank-Camden-Dare
Swann, J. F.	Person
Sweeney, John	Rockingham
Swindell, C. L.	Wilson
Swindell, W. L.	Hyde
Tankersley, J. W.	Guilford
Tate, W. C.	Watauga-Mitchell
Taylor, B. C.	Lincoln
Taylor, C. W.	Gaston
Taylor, J. T.	Rockingham
Taylor, T. G.	Rockingham
Taylor, W. S.	Surry
Taylor, W. T.	Sampson
Teague, R. J.	Durham

Name	*County*
Templeton, Jas. M.	Wake
Tennent, G. S.	Buncombe
Terrell, A. J.	Buncombe
Terry, J. R.	Davidson
Terry, R. Z.	Mecklenburg
Thigpen, W. J.	Edgecombe
Thomas, Geo. G.	New Hanover
Thomas, Pride	New Hanover
Thompson, A. T.	Montgomery
Thompson, C. D.	Lincoln
Thompson, C. O.	Anson
Thompson, Cyrus	Onslow
Thompson, J. A.	Granville
Thompson, J. B.	Rutherford
Thompson, S. M.	Wake
Thompson, W. A.	Rutherford
Timberlake, R. E.	Franklin
Trantham, H. T.	Rowan
Trimmons, H. L.	Cumberland
Tripple, C. M.	Mecklenburg
Tucker, H. McKee	Wake
Tucker, J. H.	Mecklenburg
Tull, Henry	Lenoir
Turner, H. G.	Wake
Turner, J. A.	Guilford
Turner, J. M.	Wilkes
Turner, J. P.	Guilford
Tuttle, A. F.	Rockingham
Twitty, J. C.	Rutherford
Tyson, T. D.	Alamance
Underhill, H. P.	Wake
Underwood, O. E.	Sampson
Utley, H. H.	Harnett
Vestal, W. J.	Davidson
Vick, Geo. D.	Johnston
von Ruck, Karl	Buncombe
von Ruck, S. H.	Buncombe
von Ruck, Silvio	Buncombe
Wafer, Oswald	Beaufort
Wakefield, H. A.	Mecklenburg
Wakefield, W. H.	Mecklenburg
Wakefield, W. H., Jr.,	Mecklenburg
Waldrop, J. G.	Henderson-Polk
Walker, C. E.	Mecklenburg
Walker, H. D.,	Pasquotank-Camden-Dare
Walker, L. A.	Alamance
Walker, W. E.	Alamance
Wallace, J. W.	Cabarrus
Wallis, W. J.	Transylvania
Walters, C. M.	Alamance
Ward, J. E.	Martin
Ward, W. H.,	Washington-Tyrrell
Warlick, E. S.	Burke
Warren, R. F.	Person
Warren, W. E.	Martin
Watkins, F. B.	Burke
Watkins, G. S.	Granville
Watson, J. B.	Wake
Watson, Leon	Lee
Watson, Walter	Craven
Way, J. Howell	Haywood
Weaver, H. B.	Buncombe
Weaver, W. J.	Madison
Webb, Ben. G.	Cherokee
Webb, S. E.	Rockingham
Webb, W. P.	Cordova
Wessell, J. C.	New Hanover
West, Albert	Greene
West, M. T.	Cumberland
West, R. M.	Rowan
Wharton, C. R.	Rockingham
Wharton, L. D.	Johnston
Whisnant, A. M.	Mecklenburg
Whitehead, John	Rowan
White, J. W.	Wilkes
Whitaker, Joel D.	Wake
Whitfield, W. C.	Pitt
Whitley, A. D. N.	Union
Whitley, D. P.	Stanly
Whittaker, A. C.	Guilford
Whittington, W. P.	Buncombe
Whittington, W. W.	Greene
Wiggins, J. C.	Forsyth
Wilkins, S. A.	Gaston
Willcox, J. W.	Moore
Williams, A. F.	Wilson
Williams, B. B.	Guilford
Williams, Claude B.,	Pasquotank-Camden-Dare
Williams, J. D.	Forsyth
Williams, J. H.	Buncombe
Williams, John A.	Guilford.
Williams, J. W.	Martin
Williams, R. B.	Sampson
Willingham, B. J.	New Hanover
Willis, A. P.	Haywood
Wilson, A. R.	Guilford
Wilson, C. L.	Caldwell
Wilson, F. G.	Gaston
Wilson, H. F.	Richmond
Wilson, W. P.	Rockingham
Winchester, F. M.	Mecklenburg
Windley, C. T.	Beaufort
Windley, R. E.	Hyde

Name	*County*
Wiseman, C. P.	Rutherford
Witherbee, W. D.	Mecklenburg
Witherspoon, B. J.	Mecklenburg
Withers, S. M.	Columbus
Woodard, A. G.	Johnston
Woodard, C. A.	Durham
Wood, J. W.	Cleveland
Woodley, W. T.	Mecklenburg
Woodson, C. W.	Rowan
Woody, S. B.	Madison
Wooten, A. M.	Edgecombe
Wooten, R. W.	Lenoir
Wooten, W. H.	Mecklenburg
Workly, R. V.	Davidson
Wright, Hall	New Hanover
Wright, J. V.	Lincoln
Wright, Thos.	Mecklenburg
Yarborough, R. F.	Franklin
York, A. A.	Davidson
York, H. B.	Martin
Young, J. J.	Johnston
Young, L. B.	Wake
Young, R. S.	Cabarrus
Yow, I. A.	Cabarrus
Zimmerman, R. U.	Davidson

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